Panasonic

ENGLISH

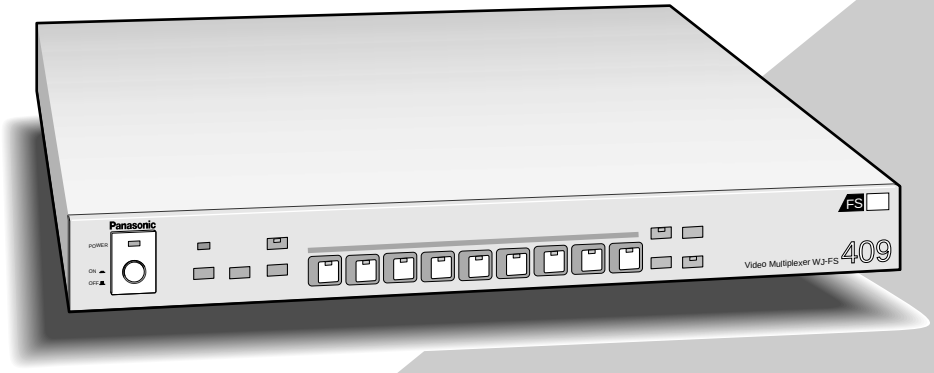
DEUTSCH

FRANÇAIS

ESPAÑOL

Video Multiplexer
Operating Instructions

Model No. WJ-FS409
WJ-FS416



Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

ENGLISH VERSION

We declare under our sole responsibility that the product to which this declaration relates is in conformity with the standards or other normative documents following the provisions of Directives EEC/73/23 and EEC/89/336.

Noi dichiariamo sotto nostra esclusiva responsabilità che il prodotto a cui si riferisce la presente dichiarazione risulta conforme ai seguenti standard o altri documenti normativi conformi alle disposizioni delle direttive CEE/73/23 e CEE/89/336.

Wij verklaren als enige aansprakelijke, dat het product waarop deze verklaring betrekking heeft, voldoet aan de volgende normen of andere normatieve documenten, overeenkomstig de bepalingen van Richtlijnen 73/23/EEC en 89/336/EEC.

Vi erklærer os eneansvarlige for, at dette produkt, som denne deklaration omhandler, er i overensstemmelse med standarder eller andre normative dokumenter i følge bestemmelserne i direktivene 73/23/EEC og 89/336/EEC.

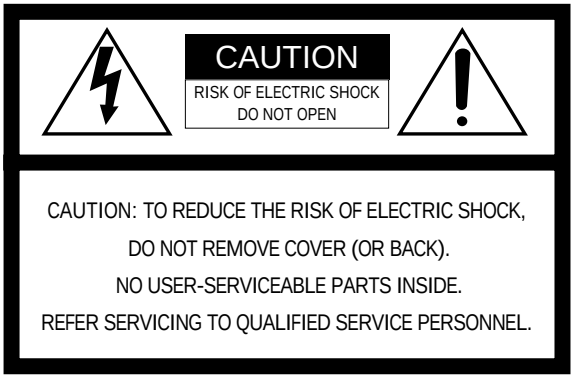
Vi deklarerar härmed värt fulla ansvar för att den produkt till vilken denna deklaration hänvisar är i överensstämmelse med standarddokument, eller andra normativa dokument som framställs i EEC-direktiv nr. 73/23 och 89/336.

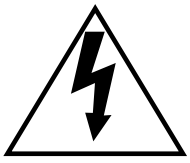
Ilmoitamme yksinomaisella vastuullamme, että tuote, jota tämä ilmoitus koskee, noudattaa seuraavia standardeja tai muita ohjeellisia asiakirjoja, jotka noudattavat direktiivien 73/23/EEC ja 89/336/EE. säädöksiä.

Vi erklærer oss alene ansvarlige for at produktet som denne erklæringen gjelder for, er i overensstemmelse med følgende normer eller andre normgivende dokumenter som følger bestemmelsene i direktivene 73/23/EEC og 89/336/EEC.

Caution:

Before attempting to connect or operate this product, please read the label on the bottom.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is interned to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The serial number of this product may be found on the bottom of the unit.
You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

For Australia

THIS APPARATUS MUST BE EARTHED.

To ensure safe operation the three-pin plug supplied must be inserted only into a standard three-pin power point which is effectively earthed through the normal household wiring. Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.
The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.

For U.K.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.
This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 13 amp fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 13 amp and that it is approved by ASTA or BSI to BS1362.
Check for the ASTA mark or the BSI mark on the body of the fuse.
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

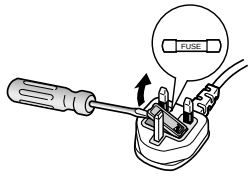
IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.
If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt please consult a qualified electrician.
WARNING: This apparatus must be earthed.

IMPORTANT
The wires in this mains lead are coloured in accordance with the following code.

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wire in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.
The wire which is coloured **green-and-yellow** must be connected to the terminal in the plug which is marked with the letter **E** or by the earth symbol ⏚ or coloured **green** or **green-and-yellow**.
The wire which is coloured blue must be connected to the terminal in the plug which is marked with the letter **N** or coloured **black**.
The wire which is coloured **brown** must be connected to the terminal in the plug which is marked with the letter **L** or coloured **red**.

How to replace the fuse
Open the fuse compartment with a screwdriver and replace the fuse and fuse cover.



WARNING:
To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

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ENGLISH

PREFACE

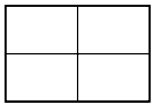
The WJ-FS409 and WJ-FS416 are Colour Video Multiplexers designed for use in surveillance security systems combined with cameras, alarm sensors, a Time Lapse VTR, two video monitors and a PC. Spot pictures and image sequences of multiple cameras can be monitored simultaneously on two video monitors. Multiscreen pictures and the Multiscreen sequence pictures can be displayed on Multiscreen monitors.

Camera and playback pictures can be displayed as zoomed and stilled Spot pictures and Still Multiscreen pictures.
Setup menus for Alarm, Monitoring, Recording and Playback are available to match system preferences to your requirements.
The WJ-FS409/FS416 and other devices compatible with Panasonic Security Data mode the bear logo PS•Data.

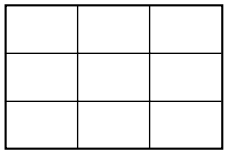
FEATURES

- The pictures of any connected camera can be displayed as a Spot picture on a full screen or Sequential screen, or as shown below on a 4-, 9- or 16-segment Multiscreen. Still and zoom modes (full screen only) are available both for live pictures and for video playback.
  (The 16-segment multiscreen is available with WJ-FS416.)

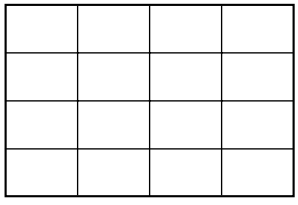
  4-segment screen



  9-segment screen



  16-segment screen



- The WJ-FS409/FS416 can be controlled from a PC or the System Control Unit (example: WV-CU360) via an RS-485 interface.
- High picture quality of 720 x 544 pixels
- Multiplexed video signals with camera IDs are supplied to the Recording Output.
- Versatile recording mode initiated by alarm trigger
- Playback image is displayed automatically without need to operate VTR/CAM button.
- The full screen image can be zoomed in 2 times.
- Preset sequence of up to 16 (9) steps with dwell times.
- Video loss detector
- On screen setup menu
- Secret view
- Versatile alarm capability

PRECAUTIONS

- **Refer all work related to the installation of this product to qualified service personnel or system installers.**

- **Do not block the ventilation opening or slots on the cover.**
  To prevent the appliance temperature from rising, place the appliance at least 5 cm (2 inches) away from the wall.

- **Do not drop metallic parts through slots.**
  This could permanently damage the appliance. Turn the power off immediately and refer servicing to qualified service personnel.

- **Do not attempt to disassemble the appliance.**
  To prevent electric shock, do not remove screws or covers.
  There are no user-serviceable parts inside. Refer maintenance to qualified service personnel.

- **Handle the appliance with care.**
  Do not strike or shake, as this may damage the appliance.

- **Do not expose the appliance to water or moisture, nor try to operate it in wet areas.**
  Do take immediate action if the appliance becomes wet. Turn the power off and refer servicing to qualified service personnel. Moisture can damage the appliance and also cause electric shock.

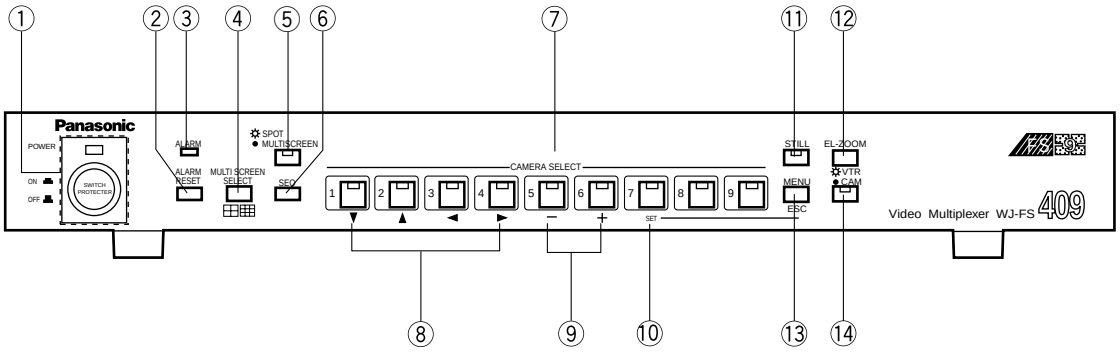
- **Do not use strong or abrasive detergents when cleaning the appliance body.**
  Use a dry cloth to clean the appliance when it is dirty. When the dirt is hard to remove, use a mild detergent and wipe gently. Afterwards wipe off the remain detergent with a dry cloth.

- **Do not operate the appliance beyond its specified temperature, humidity or power source ratings.**
  Do not use the appliance in an extreme environment where high temperature or high humidity exists.
  Use the appliance at temperatures within –10°C - +50°C (14°F - 122°F) and a humidity below 90 %.
  The input power source for this appliance is 220 V - 240 V AC 50 Hz.

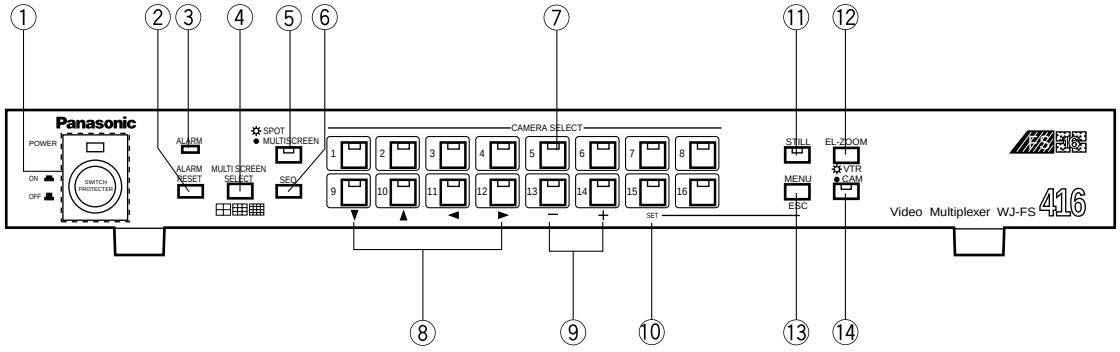
MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

■ Front View

<WJ-FS409>

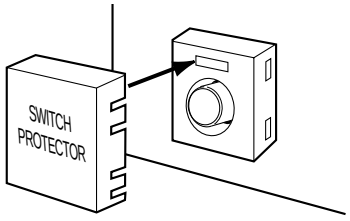


<WJ-FS416>



① **Power Switch (POWER ON/OFF)**
This switch turns the power of the video multiplexer on or off. The LED lights up when the power is turned on.

Note: To prevent that the power of the video multiplexer is turned off accidentally, install the supplied switch protector as shown below.



② **Alarm Reset Button (ALARM RESET)**
This button resets the active Alarm mode. Pressing this button turns off the Alarm indicator and replaces the "ALARM" indication on the monitor screen with the camera title.

③ **Alarm Indicator (ALARM)**
This indicator blinks when an alarm is activated. It changes to steady light when the auto-reset time has elapsed or the alarm recovery signal is received from the VTR. To turn the indicator off, press the **ALARM RESET** button.

④ **Multiscreen Selection Button (MULTISCREEN SELECT)**
This button selects the multiscreen pattern for the monitor. Multiscreen is available only MULTI OUTPUT mode. Pressing this button repeatedly switches patterns as follows:

Multiscreen Picture:
4→9→4 screen segments (WJ-FS409)
4→9→16→4 screen segments (WJ-FS416)

Note: When ON is selected for QUAD SHIFT on the MONITOR OUTPUT SETUP menu, the screen changes by pressing this button as follows:
4A→4B→9 screen segments (WJ-FS409)
4A→4B→4C→4D→9→16 screen segments (WJ-FS416)

The 4A screen is a compressed picture of channels 1 through 4, the 4B of channels 5 through 8, the 4C of channels 9 through 12, and the 4D of channels 13 through 16. The 9-segment screen shows the pictures of channels 1 through 9 in a 3x3 pattern.

⑤ **Spot/Multiscreen Selection Button (SPOT/MULTISCREEN)**
This button is used to select either the Spot output or Multiscreen output.

⑥ **Sequence Button (SEQ)**
This button activates the sequence mode. In this mode, a series of camera pictures is displayed in succession on the monitor screen for the specified duration.

⑦ **Camera Selection Buttons (CAMERA SELECT)**
These buttons select the camera for live picture or picture recorded on the tape. When the VTR is in playback mode and the LED on the **VTR/CAM** button is on, these buttons select the specified camera picture from the tape for display on the monitor. When the LED is off, the buttons select the live picture of the specified camera.

⑧ **Cursor Buttons (▼, ▲, ◄, ►)**
These buttons move the cursor in the SETUP menu of the Video Multiplexer, or select an area for Electronic Zooming.
▼: Downward
▲: Upward
◄: Left
►: Right

⑨ **Increment/Decrement Buttons (–, +)**
Electronic Zooming is operated with these buttons, Zoom In with the **+** button and Zoom Out with the **–** button. During the setup, these buttons are used to select parameters.

⑩ **Set Button (SET)**
This button executes the selected parameter in the setup menu, and opens a submenu for more detailed settings. Menu items having a submenu are identified by a return symbol at the end of the line.

⑪ **Still Button (STILL)**
This button selects either still or moving mode for display on the multiscreen output monitor. Pressing a **CAMERA SELECT** button will display the corresponding picture either in still or moving mode. When a still picture is displayed, the LED lights. Pressing the button again restores the moving picture and turns off the LED.
Note: Please note that the tape continues running while the picture is stilled. You may sometimes have to rewind the tape to the desired position.

⑫ **Electric Zoom Button (EL-ZOOM)**
This button specifies the zooming area in the multiscreen output picture. Pressing this button displays the "+" sign representing the centre of the area to be enlarged. While the "+" sign is displayed for 5 seconds, move the "+" sign with the cursor buttons to the desired position and press the Increment (+) button. The designated area is enlarged.
To return to the normal picture press the Decrement (–) or the **EL-ZOOM** button.

⑬ **MENU/ESC Button (MENU/ESC)**
Pressing this button for 2 seconds or more opens the Setup Menu of the Video Multiplexer. If pressed for less than 1 second, it functions as the Escape button and returns you to the previous menu.
To close the Setup menu when the setup is completed, press the button for 2 seconds.
Notes:
- Make sure to distinguish between 1-second and 2-second operation of this button.
- Opening the Setup menu does not affect the recording signal (REC OUT) output from the rear panel.

⑭ **VTR/Camera Selection Button (VTR/CAM)**
This button selects either VTR playback or the camera picture for display on the monitor. At the same time, it disables or enables recording on the VTR, since the connected VTR performs only playback or recording at a time. The playback picture is displayed on the monitor if you start playing back the VTR while the LED is on. The camera picture is displayed on the monitor while the LED is off. The camera picture is recorded on the tape if you start the VTR recording.
Notes:
- If PLAYBACK AUTO is set to ON in the setup, pressing this button is ignored, instead this button follows the VTR status automatically. VTR is selected while playing back, and CAM is selected during non-playback mode of the VTR.
- There may be a delay of a few seconds after switching this button between VTR and CAM when PLAYBACK AUTO is ON.

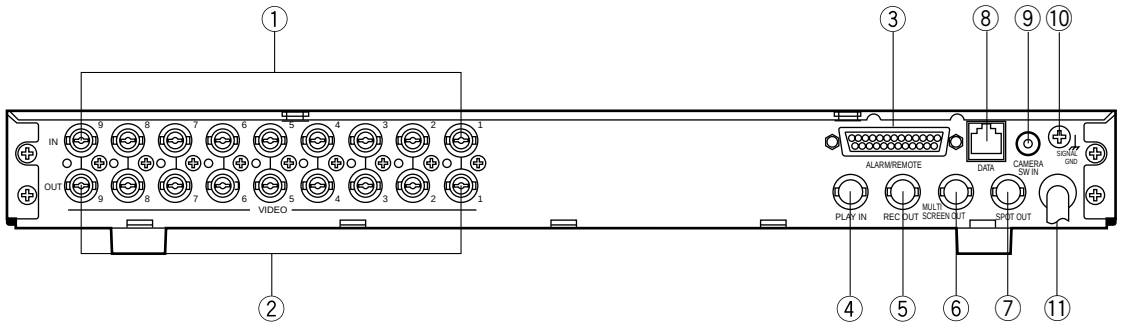
* The picture may be disturbed for a moment after switch between VTR and CAM.

- Blinking of the LED is a warning that the ID code is missing in the playback signal. This may happen when using certain VTR types. In this case, the playback picture goes straight to the monitor instead of through the Video Multiplexer. As a result, the playback picture will not be recognizable unless only a single channel is recorded throughout the tape.

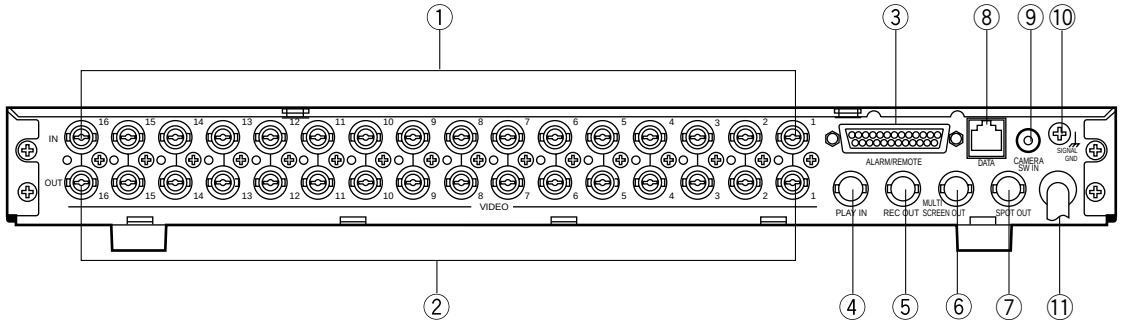
Note: Do not press more than two buttons on the front panel simultaneously. This may cause malfunction.

■ Rear View

<WJ-FS409>



<WJ-FS416>



① **Video Input Connectors (VIDEO IN)**
These connectors accept a composite video signal from a camera.
Note: If the input signals have a high jitter content, as in the case of a VTR playback picture, it may not be possible to synchronize this unit.

② **Video Output Connectors (VIDEO OUT)**
The video signals connected to the Video Input Connectors (VIDEO IN) are looped through to these connectors with an automatic 75 Ω termination.

③ **Alarm/Remote Control Connector (ALARM/ REMOTE)**
This connector accepts the alarm signals from the associated alarm sensor units and the control signals from the external system.

④ **Playback Input Connector (PLAY IN)**
The playback signal from the time lapse VTR is supplied to this connector.

⑤ **Record Output Connector (REC OUT)**
The recording signal for the time lapse VTR is provided via this connector.

⑥ **Multiscreen Output Connector (MULTISCREEN OUT)**
The video output signal for the multiscreen monitor is provided via this connector.

⑦ **Spot Output Connector (SPOT OUT)**
Provides the video output signal for the spot monitor.

⑧ **Data Port (DATA)**
For exchange control data with the WV-CU360 System Control Unit or a PC within a system.

⑨ **Camera Switching Input Connector (CAMERA SW IN)**
The camera switching pulse from the time lapse VTR is supplied to this connector.
The camera switching interval (Sequential Dwell Time) can be synchronized with the time lapse mode set in the associated time lapse VTR.

⑩ **Signal Ground Terminal (SIGNAL GND)**

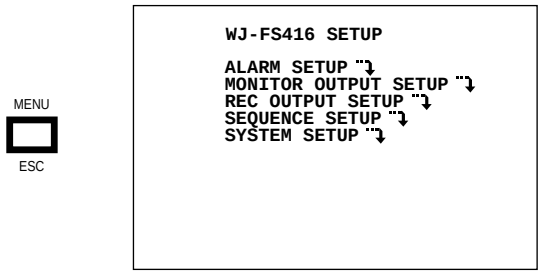
⑪ **Power Cord**

SETUP MENU

In the SETUP menu you can set preferences for ALARM, MONITOR, REC OUT, SEQUENCE and SYSTEM to meet your requirements.

● Displaying the SETUP menu

1. Confirm that the camera and peripherals are connected correctly and securely.
2. Turn on the power switches of all system components.
3. Press the **MENU/ESC** button for 2 seconds or more.
   The SETUP menu appears on the monitor as shown below.

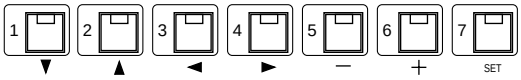


The items of the WJ-FS409 SETUP menu are the same as in the WJ-FS416 SETUP menu.

- The following buttons are used in the SETUP menu:

  ▼: Moves the cursor downward.
  ▲: Moves the cursor upward.
  ◄: Moves the cursor to the left.
  ►: Moves the cursor to the right.
  – : Selects the mode or parameter.
  + : Selects the mode or parameter.
  SET: Executes the selections and displays a submenu for an item with the (⏎) mark.

<WJ-FS409>



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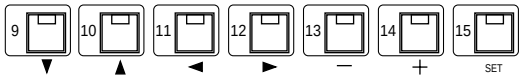


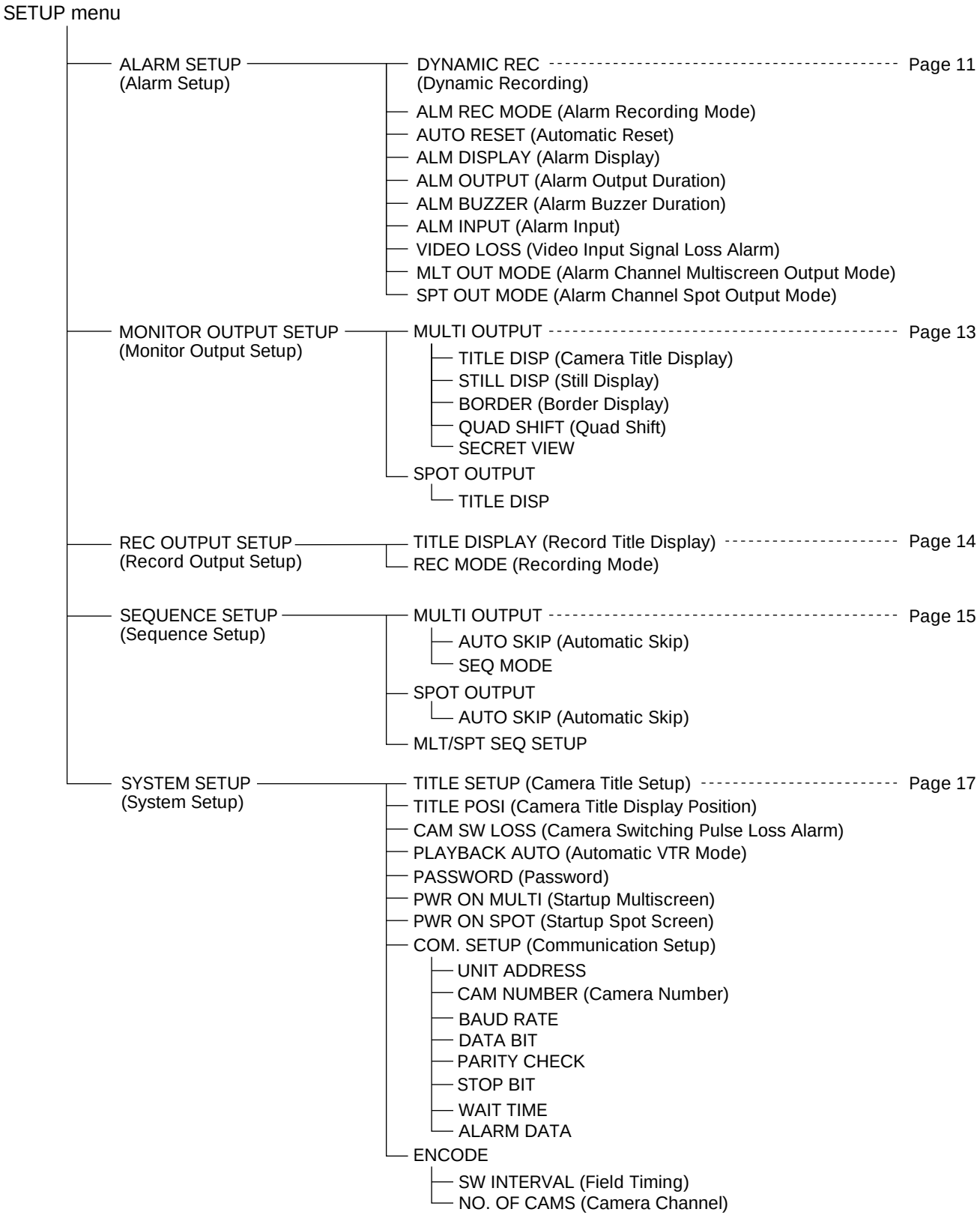
- Press the **MENU/ESC** button to execute the currently highlighted setting and return to the previous menu in the SETUP menu.

- To finalize the setting and return to normal viewing, press the **MENU/ESC** button for 2 seconds while the SETUP menu is displayed.

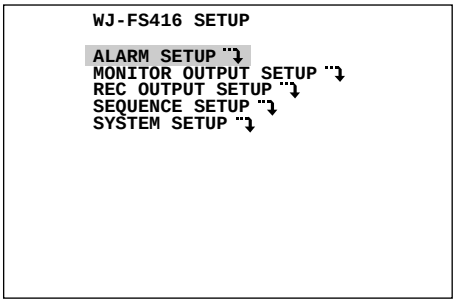
  Note: If alarm is activated during the setup operation, the SETUP menu disappears and the display returns to the normal picture. Any settings previously made take effect, even if the **MENU/ESC** button was not pressed yet.

■ Setup Menu

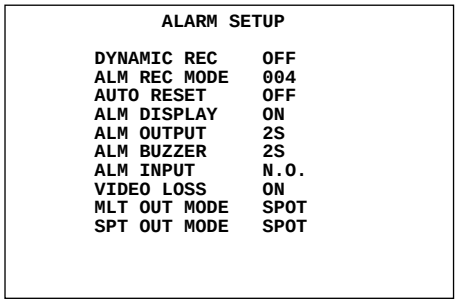
As shown below, the SETUP menu has five main submenus: Alarm Setup, Monitor Output Setup, Record Output Setup, Sequence Setup and System Setup.
All of these submenus are further divided into additional submenus.



■ Alarm Setup Menu



Move the cursor to ALARM SETUP on the SETUP menu, then press the **SET** button. The ALARM SETUP menu appears on the monitor screen as shown below.



1. DYNAMIC REC

This item lets you select the camera channel(s) whose picture is to be recorded on the VTR when an alarm signal is received. There are priority options for recording of channel(s) ranging from equal priority of all channels to exclusive recording of a specified channel.

1. Move the cursor to the DYNAMIC REC parameter.
2. Select OFF, ALM - PRI, ALM-ONLY or GROUP by pressing the **+** or **–** button.
   The initial factory setting is OFF.

   OFF: The video signals are recorded from channels number 1 to 9 (WJ-FS409) or 1 to 16 (WJ-FS416) regardless of any channels receiving the alarm signal.

   ALM - PRI: The video signal of the channel that received the alarm signal is recorded with more fields than normal.

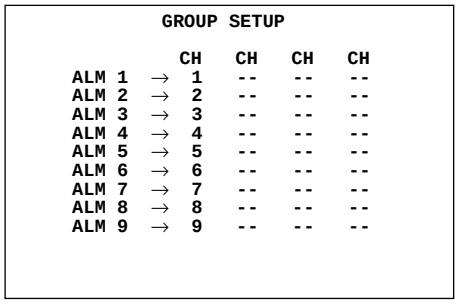
   ALM-ONLY: The recording output is monopolized by the picture of the channel that received the alarm, while the pictures on other channels are omitted.

   Note: ALM-ONLY is not applicable, when a WJ-DR200 AV Disc Recorder is connected to the unit.

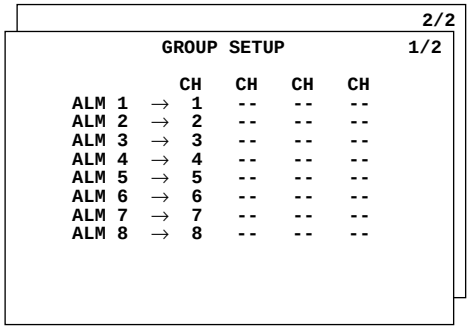
   GROUP: Up to 4 channels are merged into a group. When an alarm is received, the video signals of this channel group are recorded with more fields than normal.

   If the DYNAMIC REC parameter is on GROUP, proceed as follows:

<WJ-FS409>



<WJ-FS416>



1. Move the cursor on GROUP in the DYNAMIC REC line and press the **SET** button to open the GROUP SETUP menu shown above.
2. Move the cursor to the desired position by pressing the ▼, ▲, ◄, ► buttons.
   Note: To turn over the page for WJ-FS416, keep the cursor moving up or down.
3. Select the camera number by pressing the Increment (+) or Decrement (–) button.
4. Repeat steps 2 and 3 until all groupings are entered.
   Note: Assigning one camera channel to plural alarm inputs is acceptable.

2. ALM REC MODE

This item lets you select the time interval (field rate) for switching the camera channel for the REC OUT signal. This setting takes effect only when an alarm is activated.

1. Move the cursor to the ALM REC MODE parameter.
2. Select a field rate or EXT by pressing the **+** or **–** button.
   The initial factory setting is 004.

   004 - 128: REC OUT signal is switched from one camera channel to another at the field rate specified here. The appropriate field rate may vary depending on the VTR model. Consult the VTR specifications on the field rate.

   EXT: Switching of the REC OUT signal is controlled by the camera switching signal supplied by the connected VTR.

Notes:

- If set to EXT, make sure that the CAMERA SW IN terminal on the rear panel is connected to the Time Lapse VTR.
- Depending on the mutual timing between the alarm trigger and the field rate, the initial picture recorded after an alarm is activated may not be related to the alarm.

3. AUTO RESET

This item lets you set the time the Video Multiplexer retains the alarm mode before automatic resetting to non-alarm mode. When alarm is activated the display of the camera title on the monitor alternates with "ALARM". After the time you set, the previous, non-alarm mode is restored.

1. Move the cursor to the AUTO RESET parameter.
2. Select the desired duration by pressing the **+** or **–** button.
   The initial factory setting is OFF.

   OFF: Disables auto reset.
   1S - 30S, 40S, 50S, 1M - 5M: Selects an alarm duration from 1 - 30, 40, 50 seconds or 1 - 5 minutes.

4. ALM DISPLAY

This item lets you enable or disable the "ALARM" display overlaid on the camera picture while the alarm is activated.

1. Move the cursor to the ALM DISPLAY parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is ON.

   ON: Enables "ALARM" display on the monitor.
   OFF: Disables "ALARM" display on the monitor.

5. ALM OUTPUT

This item lets you select the duration of the Alarm Output signal. When the alarm signal comes in, the Alarm Output signal is supplied to the external device connected. Consult the specifications of the external device on the duration.

1. Move the cursor to the ALM OUTPUT parameter.
2. Select the parameter by pressing the **+** or **–** button.
   The initial factory setting is 2S.

   OFF: No Alarm Output signal is supplied, regardless of an incoming alarm.
   1S - 30S, 40S, 50S, 1M - 5M: The connected external device is driven for the duration set here. S and M stand for seconds and minutes.
   EXT: The Alarm Output signal continues until the **ALARM RESET** button is pressed or an alarm recovery signal is supplied from the VTR.

6. ALM BUZZER

This item lets you select the ringing duration of the built-in alarm buzzer when alarm is activated.

1. Move the cursor to the ALM BUZZER parameter.
2. Select the duration by pressing the **+** or **–** button.
   The initial factory setting is 2S.

   OFF: Disables the alarm buzzer output.
   1S - 30S, 40S, 50S, 1M - 5M: Selects an alarm duration from 1 - 30, 40, 50 seconds or 1 - 5 minutes.
   EXT: The alarm buzzer continues to beep until the **ALARM RESET** button is pressed or an external alarm recover signal is received.

7. ALM INPUT

This item lets you select the input form of the alarm signal. Consult the specifications of the sensor device.

1. Move the cursor to the ALM INPUT parameter.
2. Select the parameter by pressing the **+** or **–** button.
   The initial factory setting is N.O.

   N.O.: Stands for Normally Open type contact. When active the contact closes.
   N.C.: Stands for Normally Closed type contact. When active the contact opens.

8. VIDEO LOSS

This item lets you enable or disable the channel loss display on the monitor screen if the video signal is interrupted due to, for example, a cable disconnection.

1. Move the cursor to the VIDEO LOSS parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is ON.

   ON: Enables the channel loss display (CHXX LOSS) on the monitor screen.
   Note: XX indicates the channel number.

   OFF: Disables the channel loss display on the monitor screen.
   Note: If the video signal is interrupted and the message "CHXX LOSS" is displayed, check that the connections are correct and firm, then input the video signal again or press the **ALARM RESET** button. This resets the channel loss display.

9. MLT OUT MODE

This item lets you select whether to switch the multiscreen output monitor screen automatically to the camera picture of the channel whose alarm is activated.

1. Move the cursor to the MLT OUT MODE parameter.
2. Select OFF or SPOT by pressing the **+** or **–** button.
   The initial factory setting is SPOT.

   OFF: Ignores alarm activation and continues to display the pictures in the mode selected previously. All buttons except alarm reset button do not valid on condition that alarm reset does not complete.
   SPOT: The camera picture whose alarm is activated is displayed and retained until the alarm is reset.

10. SPT OUT MODE

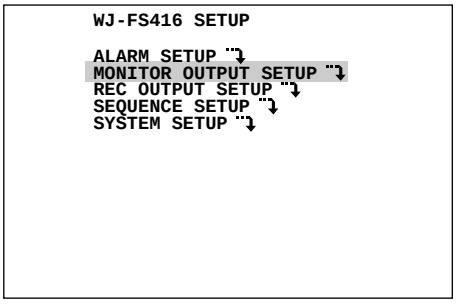
This item lets you select whether to switch the spot output monitor screen automatically to the camera picture of the channel whose alarm is activated.

1. Move the cursor to the SPT OUT MODE parameter.
2. Select OFF or SPOT by pressing the **+** or **–** button.
   The initial factory setting is SPOT.

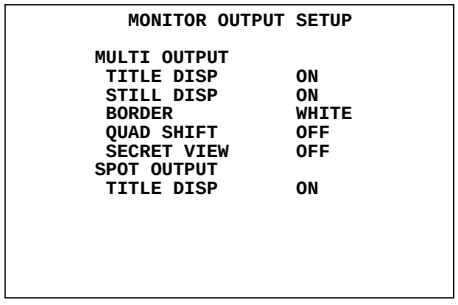
   OFF: Ignores alarm activation after and continues to display the pictures in the mode selected previously. All buttons except alarm reset button do not valid on condition that alarm reset does not complete.
   SPOT: The camera picture whose alarm is activated is displayed and retained until the alarm is reset.

■ Monitor Output Setup Menu

1. MULTI OUTPUT



Move the cursor to MONITOR OUTPUT SETUP on the SETUP menu, then press the **SET** button. The MONITOR OUTPUT SETUP menu appears on the monitor screen as shown below.



1-1. TITLE DISP

This item lets you enable or disable the camera title display overlaid on the multiscreen picture.

1. Move the cursor to the TITLE DISP parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is ON.

   ON: Enables display of the camera title.
   OFF: Disables display of the camera title.

1-2. STILL DISP

This item lets you enable or disable the subtitle “STILL” overlaid on the multiscreen output picture.

1. Move the cursor to the STILL DISP parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is ON.

   ON: Enables display of the subtitle “STILL”.
   OFF: Disables display of the subtitle “STILL”.

1-3. BORDER

This item lets you select the colour of the border that splits the multiscreen output pictures in a Multiscreen display.

1. Move the cursor to the BORDER parameter.
2. Select the desired mode or colour by pressing the **+** or **–** button.
   The initial factory setting for the border colour is WHITE.

   WHITE: White Border
   GREY: Grey Border
   BLACK: Black Border
   OFF: No border

1-4. QUAD SHIFT

This item lets you enable or disable the quad shift operation when the **MULTISCREEN SELECT** button is pressed on the front panel. Quad shift displays a picture series such as 1-2-3-4, 5-6-7-8, 9-10-11-12 or 13-14-15-16 on quad screens.(WJ-FS409 is only available 1-2-3-4 or 5-6-7-8.)

1. Move the cursor to the QUAD SHIFT parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is OFF.

   ON: Enables the quad shift operation.
   OFF: Disables the quad shift operation.

1-5. SECRET VIEW

This item lets you select whether to have the channel selected for SPOT OUTPUT displayed as MULTI OUTPUT.

1. Move the cursor to the SECRET VIEW parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is OFF.

   OFF: Disables Secret View. The same picture as displayed in SPOT OUTPUT is also displayed in MULTI OUTPUT.
   ON: Enables Secret View. The channel of Spot that is selected for SPOT OUTPUT, is displayed for black picture in MULTI OUTPUT.
   In case of the Spot Sequence mode, corresponding picture is skipped.

2. SPOT OUTPUT

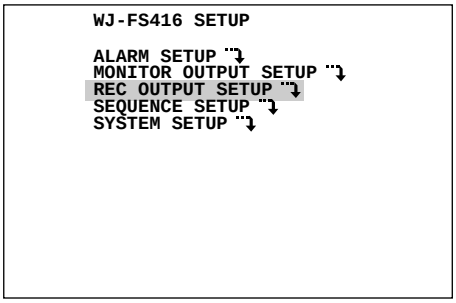
2-1. TITLE DISP

This item lets you enable or disable the camera title display overlaid on the spot output picture.

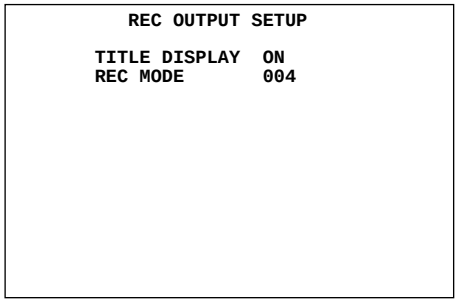
1. Move the cursor to the TITLE DISP parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is ON.

   ON: Enables display of the camera title.
   OFF: Disables display of the camera title.

■ Record Output Setup Menu



Move the cursor to REC OUTPUT SETUP on the SETUP menu, then press the **SET** button. The REC OUTPUT SETUP menu appears on the monitor screen as shown below.



1. TITLE DISPLAY

This item lets you enable or disable recording of the camera title with the picture.

1. Move the cursor to the TITLE DISPLAY parameter.
2. Select either ON or OFF.
   The initial factory setting is ON.

   ON: Enables recording of the camera title with the picture on the tape.
   OFF: Disables recording of the camera title with the picture on the tape.

2. REC MODE

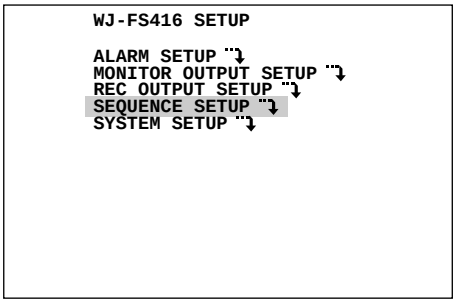
This item lets you select the time interval (field rate) for switching the camera channel of the REC OUT signal. When REC MODE is set to EXT, the timing is controlled by the connected VTR. When 004 - 255 (INT) is selected, the timing corresponds to the field rate set here.
The parameter settings for different VTR models are shown in the ADDENDUM.

1. Move the cursor to the REC MODE parameter.
2. Select a field rate or EXT by pressing the **+** or **–** button.
   The initial factory setting is 004 (INT).

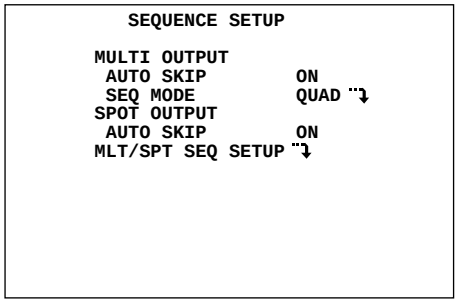
   004 - 255 (INT): REC OUT signal is switched from one camera channel to another at the field rate specified here.
   Note: The appropriate field rate may vary depending on the VTR model. Consult the VTR specifications on the field rate.
   EXT: Switching of the REC OUT signal is controlled by the camera switching signal supplied by the connected VTR.
   Note: If set to EXT, make sure that the CAMERA SW IN terminal on the rear panel is connected to the Time Lapse VTR.

■ Sequence Setup Menu

1. MULTI OUTPUT



Move the cursor to SEQUENCE SETUP on the SETUP menu, then press the **SET** button. The SEQUENCE SETUP menu appears on the monitor screen as shown below.



1-1. AUTO SKIP

This item lets you enable or disable the Auto Skip function to skip any steps where no video signal is present at the multiscreen output.

1. Move the cursor to the AUTO SKIP parameter.
2. Select either ON or OFF.
   The initial factory setting is ON.

   ON: Enables the auto skip function.
   OFF: Disables the auto skip function.

   Note: The auto skip function is not available when playing back pictures.

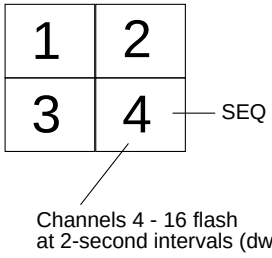
1-2. SEQ MODE

This item lets you select the Sequence pattern for display on the Multiscreen monitor.

1. Move the cursor to the SEQ MODE parameter.
2. Select the desired Sequence mode or dwell time by pressing the **+** or **–** button.
   The initial factory setting is QUAD.

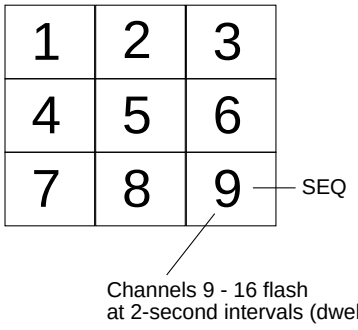
   QUAD: Pictures are displayed on a quad screen in the selected sequence mode and dwell time.
   Note: In the 9-channel pattern of WJ-FS409, channels 1 - 8 are displayed on two quad screen pages. Channel 9 is not displayed.
   3+1→2S: All segments of the quad screen, except the bottom right, display pictures in the selected sequence and dwell time.
   Dwell time: Can be set to 2S - 30S.
   Note: The display position of quad pictures in Sequence mode is fixed for channels 1 to 3. It cannot be changed.

(Example)



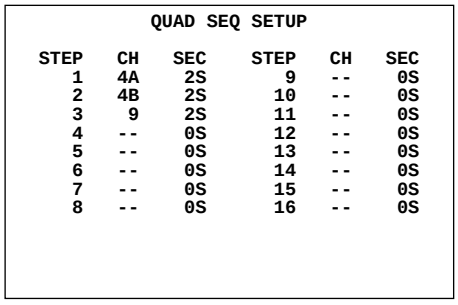
   8+1→2S: All segments of the 9-segment screen, except the bottom right, display pictures in the selected sequence and dwell time.
   Dwell time: Can be set to 2S - 30S.

(Example)

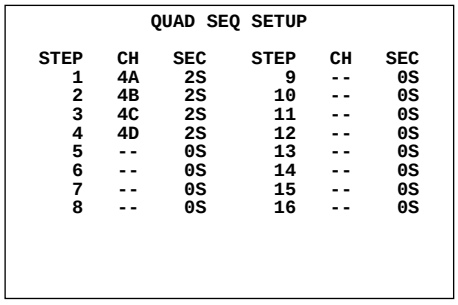


   Notes:
   - The display position of 9-segment screen pictures in Sequence mode is fixed for channels 1 to 8. It cannot be changed.
   - This function is available only for the WJ-FS416 Video Multiplexer.

<WJ-FS409>



<WJ-FS416>



Step Assignment

1. Move the cursor to the step number you desire to edit in the CH area by pressing the cursor (▼, ▲, ◄, ►) buttons.
2. Select the desired camera channel in the CH area by pressing the Increment (+) or Decrement (–) button.

   1 - 16: Camera Channel
   4A: 1 - 4 channel
   4B: 5 - 8 channel
   4C: 9 - 12 channel (only for WJ-FS416)
   4D: 13 - 16 channel (only for WJ-FS416)
   Note:
   - 10 - 16 are not available for WJ-FS409.
   - 9-segment or 16-segment screen does not display in quad sequence.

   – –: Not Assigned

3. Repeat the above procedures to assign other steps.

Dwell Time

1. Move the cursor to the SEC (Second) area by pressing the cursor (▼, ▲, ◄, ►) buttons.
2. Select the desired dwell time in the SEC area by pressing the Increment (+) or Decrement (–) button.
   Dwell Time can be selected between 0S and 30S.
   Note: A step assigned a dwell time of 0S is skipped.

2. SPOT OUTPUT

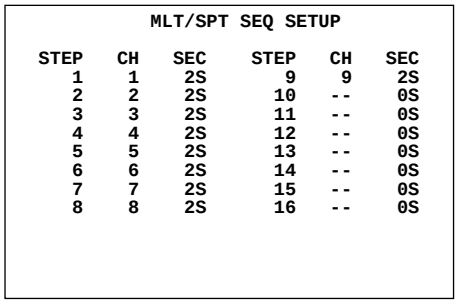
2-1. AUTO SKIP

This item lets you enable or disable the Auto Skip function to skip any steps where no video signal is present at the Spot output.
Proceed as described in MULTI OUTPUT, 1-1. AUTO SKIP on page 15.

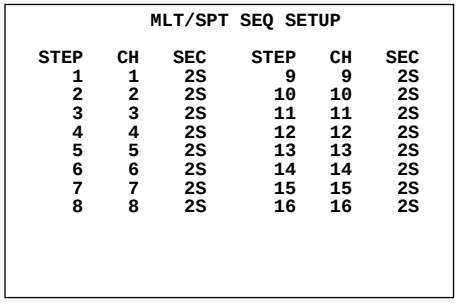
3. MLT/SPT SEQ SETUP

This item lets you program or edit a Multi or a Spot Sequence. Up to 9 (16) steps can be assigned in the SPOT SEQ SETUP menu.
The duration of each step is also determined in the MLT/SPT SEQ SETUP menu.
The initial factory setting is sequential display of 9 (16) camera pictures.

<WJ-FS409>

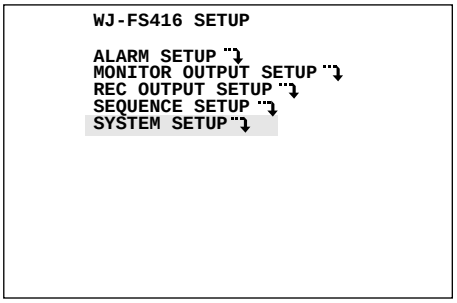


<WJ-FS416>

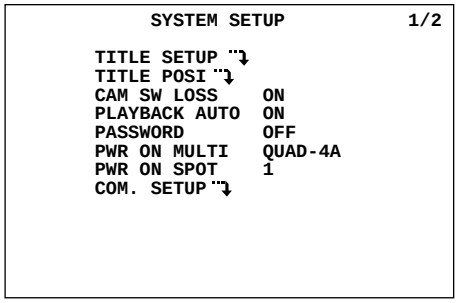


Proceed as described in MULTI OUTPUT, 1-2. SEQ MODE on page 16.

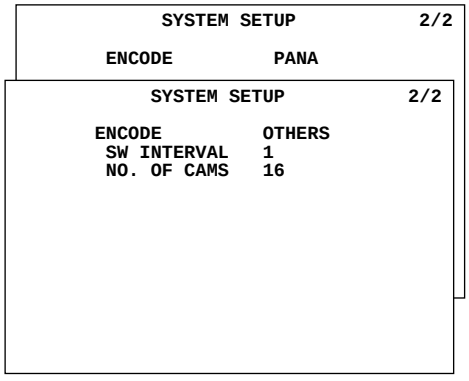
■ System Setup Menu



Move the cursor to SYSTEM SETUP on the SETUP menu, then press the **SET** button. The SYSTEM SETUP 1/2 menu appears on the monitor screen as shown below.



To go to SYSTEM SETUP 2/2, press the ▼ button.



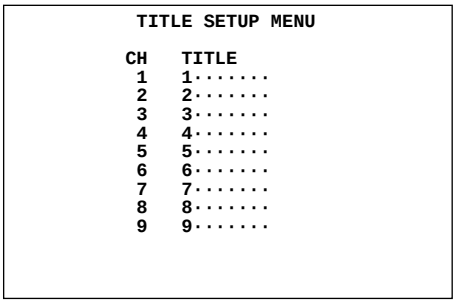
To go back to SYSTEM SETUP 1/2, press the ▲ button.

1. TITLE SETUP

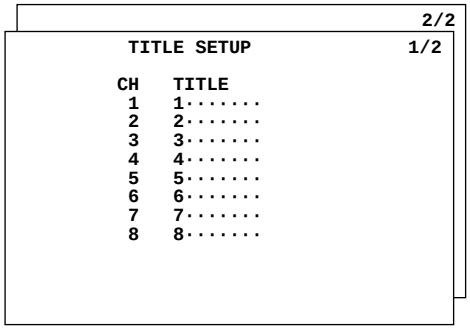
This item lets you edit the camera title to be displayed on the monitor screen.
Up to 8 alphanumeric characters can be displayed on the monitor.

1. Move the cursor to TITLE SETUP parameter, then press the **SET** button.
   The TITLE SETUP menu appears on the monitor screen as shown on next page.

<WJ-FS409>



<WJ-FS416>



2. Move the cursor to the title (TITLE) you want to edit.
3. Select the first character for the title by pressing the Increment (+) or Decrement (–) button.
   Characters for the title appear in the order shown below.

ABCDEFGHIJKLM
NOPQRSTUVWXYZ
ÄÜÖÆÑÅ
0123456789
←→**=?'"#&()*+,**
-./:;·(space mark)

4. After selecting the first character, press the ► button. Then select the second character.
5. Repeat steps 3 to 4 above to complete the title.
6. Repeat steps 2 to 5 to edit the titles of other channels.
7. Press the **MENU/ESC** button to finalize the character selection. The title is set, and the display returns to SYSTEM SETUP.

To erase a specific character

1. Select a character to be erased.
2. Select "•" (space mark) to erase the character.

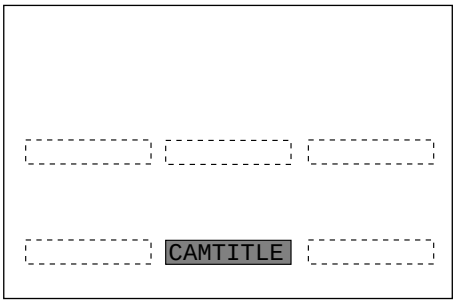
To erase the title of a specific channel

1. Move the cursor to the channel number whose title is to be erased.
2. Press **–** and **+** buttons 2 seconds or more simultaneously.

2. TITLE POSI

This item lets you select the position on the monitor where the camera title is displayed. The initial factory setting places the title at the bottom centre of the monitor screen.

1. Move the cursor to TITLE POSI parameter, then press the **SET** button. The position setting menu appears on the monitor screen.
2. Move the title by pressing the cursor (▼, ▲, ◄, ►) buttons.



3. Press the **MENU/ESC** button to execute the selection and return to the SYSTEM SETUP menu.

3. CAM SW LOSS

This item lets you select whether to display "SW LOSS" warning on the monitor when the camera switching pulse is not supplied from the VTR.

Notes:

- This selection is effective only when the Recording Mode in the Record Output Setup Menu is set to EXT.
- To reset the warning, reconnect the CAMERA SW IN connector.

1. Move the cursor to the CAM SW LOSS parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is ON.

   ON: Enables the display (SW LOSS) on the monitor screen.
   OFF: Disables the display.

4. PLAYBACK AUTO

This item lets you enable or disable the PLAYBACK AUTO mode. When PLAYBACK AUTO is set to ON, the pictures displayed on the monitor correspond to the mode of the VTR without the **VTR/CAM** button being pressed. Playback pictures are displayed when the VTR is in playback mode and camera pictures when the VTR is in non-playback mode.

1. Move the cursor to the PLAYBACK AUTO parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is ON.

ON: Enables the PLAYBACK AUTO mode.
OFF: Disables the PLAYBACK AUTO mode.

5. PASSWORD

This item lets you select whether to permit free or limited access to the Setup menus. When PASSWORD is set to ON, the operator must enter the password to access the menus.

1. Move the cursor to the PASSWORD parameter.
2. Select ON or OFF by pressing the **+** or **–** button.
   The initial factory setting is OFF.

5-1. Password registration

Enter a 4-digit password consisting of numbers from 1 to 9 (except 0).

ON→1111-9999:
Password required to access the Setup menus.

1. Select ON by pressing the **+** or **–** button.
2. Move the cursor to the desired (first) digit by pressing the ◄ or ► button.
3. Select the desired number by pressing the **+** or **–** button.
4. Repeat steps 2 and 3 until all digits are registered.

OFF: No password required to access the Setup menus (access is free).

5-2. Reply to password request

If PASSWORD parameter is set to ON, the operator is requested to type the password to access the Setup menus.

1. Press the **MENU/ESC** button for 2 seconds or more. The password inquiry screen prompts you to type the password.
2. Type the 4-digit password by pressing the **CAMERA SELECT** buttons 1 through 9, and the ◄ or ► button.
3. The Setup menu appears if the typed password is correct. If a wrong password is typed, the screen displays “NG” and returns to the screen before the **MENU/ESC** button was pressed.
4. To retry repeat steps 1 and 2.

5-3. Changing the password

The password currently registered can be changed as follows.

1. Press the **MENU/ESC** button for 2 seconds or more to display the password inquiry screen. Then type in the current password by pressing the **CAMERA SELECT** buttons, and the ◄ or ► button. The SETUP menu appears.
2. In the SYSTEM SETUP menu, select ON for the PASSWORD parameter.
3. Move the cursor to the first (desired) digit by pressing the ◄ or ► button.
4. Select the desired number by pressing the **+** or **–** button.
5. Repeat step 3 and 4 until all digits are registered.
6. After registration the new password is required when the operator accesses the SETUP menus.

6. PWR ON MULTI

This parameter lets you select a multiscreen output pattern for your startup screen. When the power is turned on, the picture is displayed in the selected pattern.

1. Move the cursor to the PWR ON MULTI parameter.
2. Select 1 - 16 (1 - 9 only for WJ-FS409), SPOT SEQ or QUAD-4A to 4D, 9 screen, 16 screen, MLT-SEQ.
   The initial factory setting is QUAD-4A.

1 - 16: Spot picture of selected channel is displayed.
SPOT SEQ: A sequence of spot pictures is displayed.
QUAD-4A to 4D: 4-segment screen
9 screen: 9-segment screen
16 screen: 16-segment screen
MLT-SEQ: Multiscreen sequence

7. PWR ON SPOT

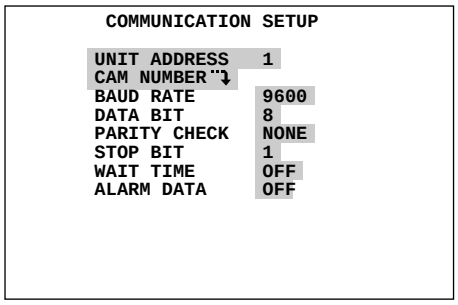
This parameter lets you select a Spot output pattern for your startup screen. When the power is turned on, the picture is displayed in the selected pattern.

1. Move the cursor to the PWR ON SPOT parameter
2. Select 1 - 16 (1 - 9 only for WJ-FS409) or SPOT SEQ.
   The initial factory setting is 1.

1 - 16: Spot picture of selected channel is displayed.
SPOT SEQ: A sequence of spot pictures is displayed.

8. COMMUNICATION SETUP

This item lets you set the parameters for the Video Multiplexer to communicate with the appliances linked to the RS-485 chain. Camera numbers also need to be specified since the system can comprise tens of units with 16 or 9 cameras connected to each.



Move the cursor to COM. SETUP, and then press the **SET** button. The COMMUNICATION SETUP menu appears on the monitor.

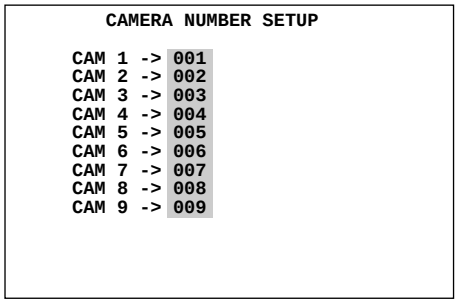
8-1. UNIT ADDRESS

1. Move the cursor to the UNIT ADDRESS.
2. Select a unit address by pressing the **+** or **–** button.
   1 - 99: Give the Video Multiplexer a unique address that is not yet used in the RS-485 chain.

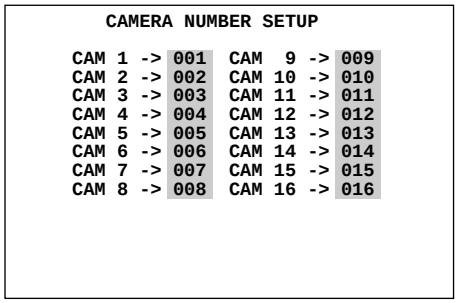
8-2. CAM NUMBER

1. Move the cursor to CAM NUMBER, and then press the **SET** button. The CAMERA NUMBER SETUP menu appears on the monitor.

<WJ-FS409>



<WJ-FS416>



2. Move the cursor to the desired CAM line, and then select a camera number by pressing the **+** or **–** button.
   001 to 128: Give a camera a unique number that is not yet used in the RS-485 chain.
   Note: This works only for cameras connected to the specific Video Multiplexer.

3. Repeat step 2 until each camera has been assigned a unique number.

8-3. BAUD RATE

Move the cursor to BAUD RATE, and then select a rate by pressing the **+** or **–** button.
The initial factory setting is 9600.
9600, 4800, 2400: Consult the RS-485 system configuration for the baud rate.

8-4. DATA BIT

Setting is fixed for 8 bit. The cursor skips.

8-5. PARITY CHECK

Move the cursor to PARITY CHECK, and then select a parameter by pressing the **+** or **–** button.
The initial factory setting is NONE.
NONE, EVEN, ODD: Consult the RS-485 system configuration for parity check.

8-6. STOP BIT

Move the cursor to STOP BIT, and then select either 1 or 2 by pressing the **+** or **–** button.
The initial factory setting is 1.
1, 2: Consult the RS-485 system configuration for the number of stop bits in a message.

8-7. WAIT TIME

Move the cursor to WAIT TIME, and then select a parameter by pressing the **+** or **–** button.
The initial factory setting is OFF.
OFF, 100, 200, 400, 1000: Consult the RS-485 system configuration for waiting time in milli-second (ms).

8-8. ALARM DATA

Move the cursor to ALARM DATA, and then select 0S, 1S, 5S or OFF by pressing the **+** or **–** button.
The factory default setting is OFF.
0S, 1S, 5S: Enables alarm data transmission to the outboard devices. The received alarm will be activated at the selected time delay.
OFF: Disables alarm data transmission from the Video Multiplexer.

Notes:

- When no other devices are connected to the data port of the Video Multiplexer, set the ALARM DATA parameter to OFF.
- When other devices are connected to the data port of the Video Multiplexer, set the ALARM DATA parameter to 0S, 1S or 5S.

9. ENCODE

This item lets you adjust parameters for playing back tapes that are recorded on a Panasonic system or a non-Panasonic system.

1. Move the cursor to the ENCODE parameter.
2. Select PANA or OTHERS by pressing the **+** or **–** button. The initial factory setting is PANA.

PANA: Select this, if the tape was recorded on a Panasonic Multiplexer system.
OTHERS: Select this for non-Panasonic system.

9-1. SW INTERVAL

This item lets you notify the Multiplexer of the field interval in which camera channels are switched on the recorded tape.

1. Move the cursor to the SW INTERVAL parameter.
2. Select 1, 2, or 4 by pressing the **+** or **–** button. The initial factory setting is 1.

1: Select this, if the tape is recorded with field rate 1.
2: Select this, if the tape is recorded with field rate 2.
4: Select this, if the tape is recorded with field rate 4.

9-2. NO. OF CAMS

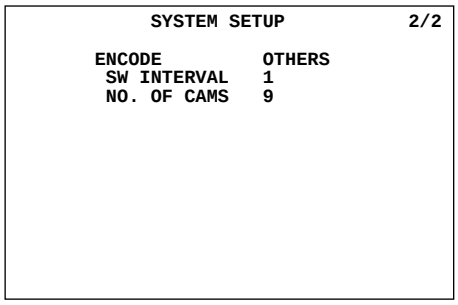
This item lets you notify the Multiplexer of the highest channel number recorded on a tape.

1. Move the cursor to the NO. OF CAMS parameter.
2. Select a camera channel between 1 - 16 (1 - 9 for WJ-FS409) by pressing the **+** or **–** button. The initial factory setting is 16 (9 for WJ-FS409).

Notes:
- If PANA is selected, it is not necessary to set SW INTERVAL and NO. OF CAMS.
- If OTHERS is selected, set the VTR's time mode to 2H or 6H, not to T/L (Time Lapse).
- If OTHERS is selected, tapes recorded with a random order of camera channels (e.g., recorded in ALM - PRI, ALM-ONLY or GROUP mode) will not be reproduced properly.

Playback of Tapes Recorded with Other Multiplexer Systems

The following settings are necessary to play back video tapes recorded with multiplexer systems of other manufacturers.



1. Set ENCODE to OTHERS.
2. For SW INTERVAL, set the same value as for the VTR time mode.
3. For NO. OF CAMS, set the number of cameras recorded on the tape.

Notes:
- Set SW INTERVAL to 1 for tapes recorded in 24H mode or longer.
- Set SW INTERVAL as follows for tapes recorded in 2H or 6H mode:
  1: Tapes recorded with field rate 1
  2: Tapes recorded with field rate 2
  3: Not available
  4: Tapes recorded with field rate 4
- The display pattern of camera channels on the multiscreen may differ from the normal pattern as shown below. Camera 1 may be placed anywhere on the multiscreen, followed by the other cameras in descending numerical order.

Original		
1	2	3
4	5	6
7	8	9

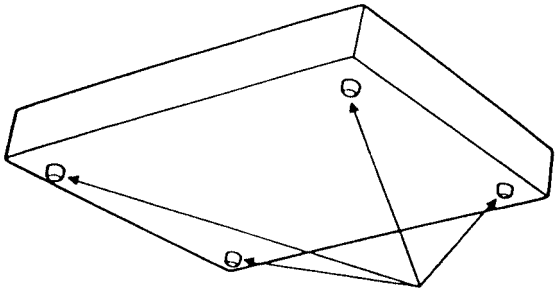
Example of display pattern for WJ-FS409/FS416

4	3	2
1	9	8
7	6	5

- To display a channel in SPOT mode, press the CAMERA SELECT button corresponding to the channel number that is originally displayed in that screen segment. For example, press CAMERA SELECT button #1 to display the channel 4 picture.
- When playing back a tape recorded in an alarm priority mode, camera channels are not displayed on the multiscreen in the recorded order.

■ Mounting in the Rack

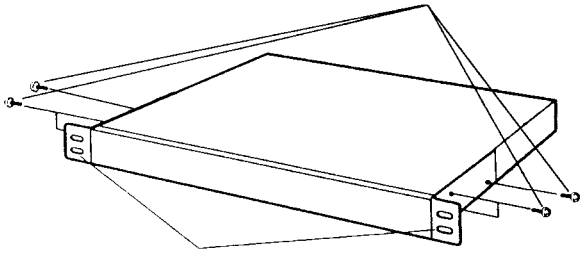
1. Remove the four rubber feet by removing the four screws on the bottom of the video multiplexer.



Remove 4 rubber feet

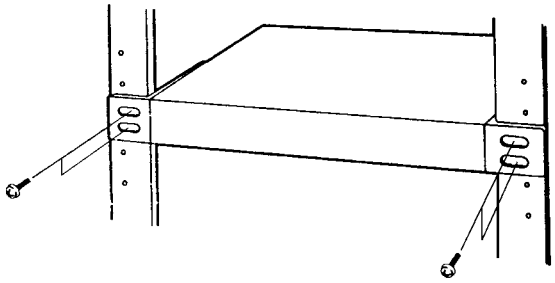
2. Place the rack mounting brackets on both sides of the video multiplexer and tighten with the six supplied screws (M3 x10).

Six screws (Supplied)



Fix the rack mounting brackets

3. Install the video multiplexer with the rack mounting brackets in the rack by using four screws (not included).

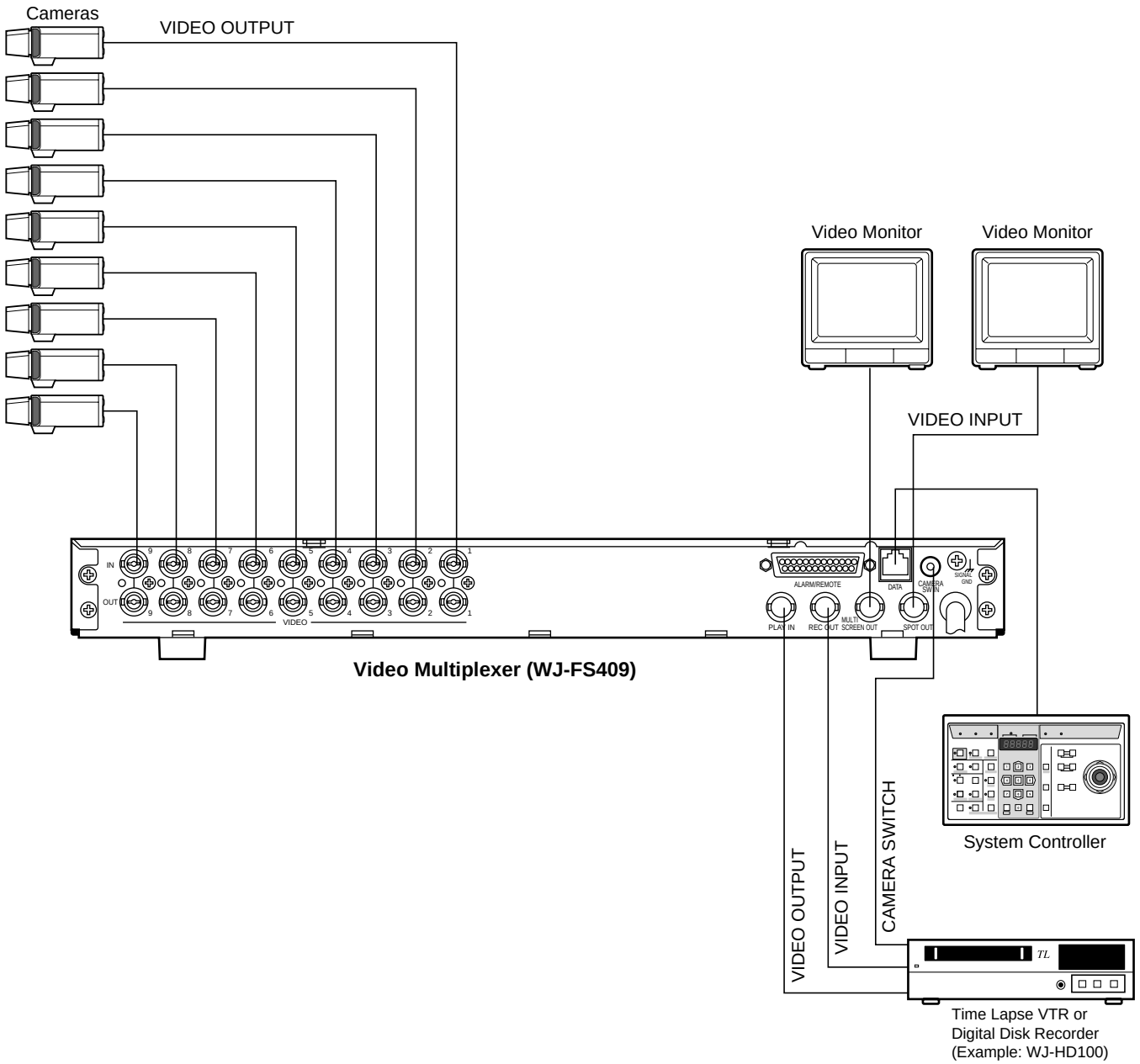


Cautions:

- Do not block the ventilation opening or slots on the cover to prevent the appliance from overheating. Always keep the temperature in the rack within 50°C (122°F).
- Secure the rear of the appliance to the rack by using additional mounting brackets (procured locally) if the rack is subject to vibrations.

■ Basic System Connection

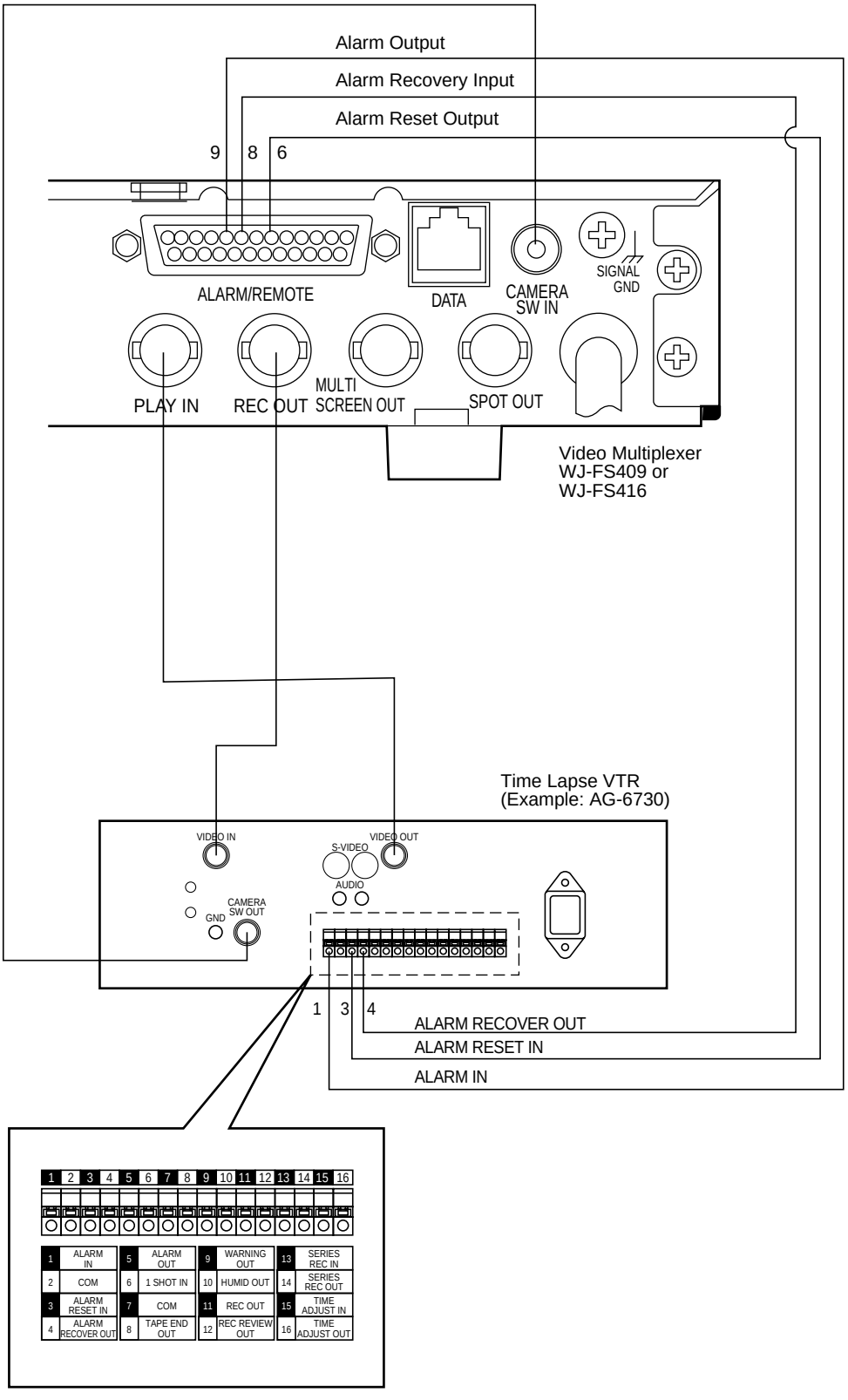
The Video Multiplexers WJ-FS409 and WJ-FS416 are connected with cameras, video monitors and a Time Lapse VTR. A typical connection example is shown below. The ALARM/REMOTE connector is described later.



- The figure shows the WJ-FS409. The WJ-FS416 has 16 VIDEO IN and OUT connectors each.
- Refer to the operating instructions of each system component for connection and operation.
- With certain monitor types, colour noise may appear in the picture.
- In case of connecting multiple devices compatible with the Panasonic Security Data mode, connect the unit in a daisy-chain configuration. The allowable connecting devices are up to 16 in a system. The maximum allowable cable length of the system is approximately 500 m (1 650 ft).

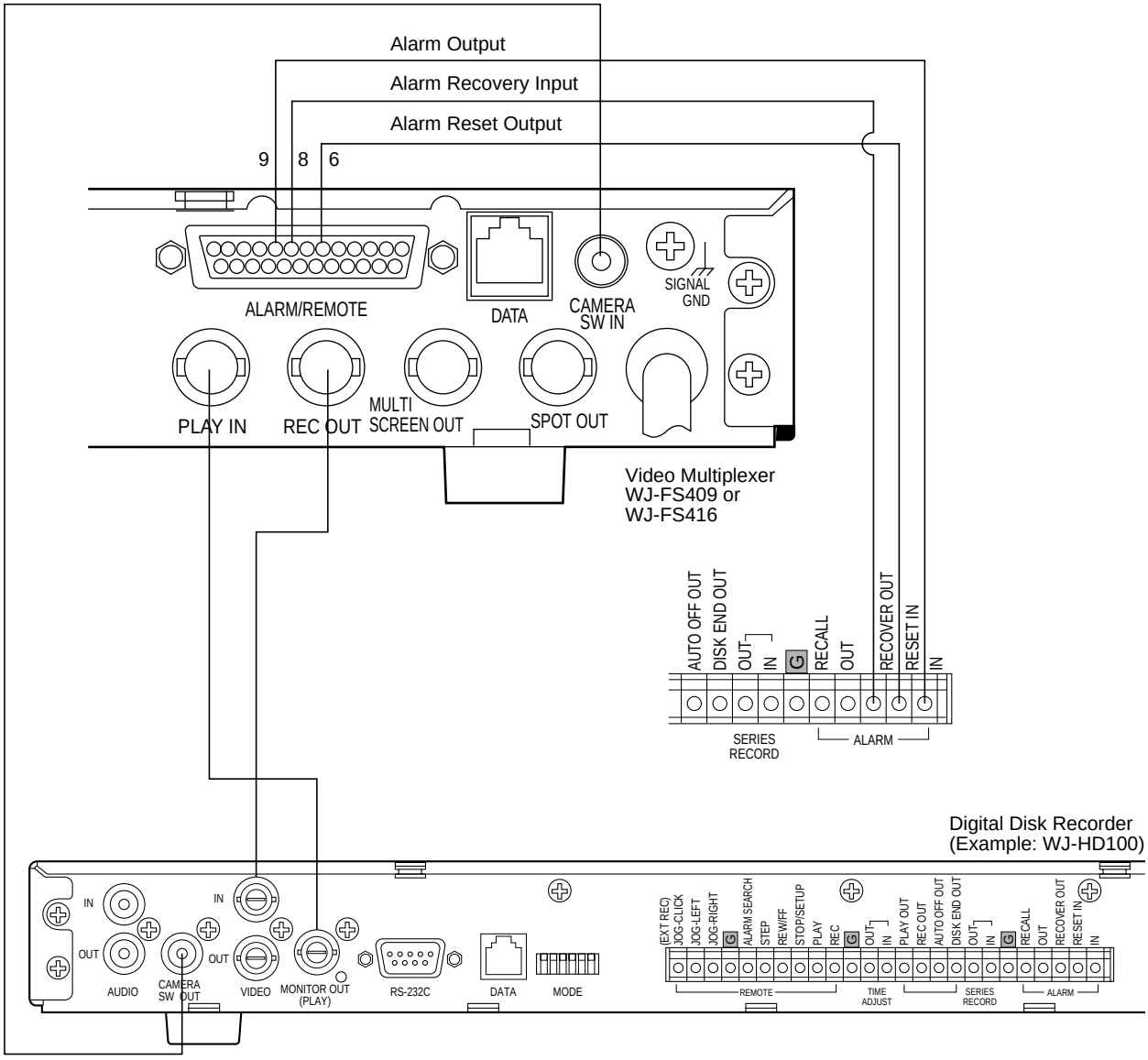
■ Connection with the Time Lapse VTR

Connect the time lapse VTR as shown in the example below.



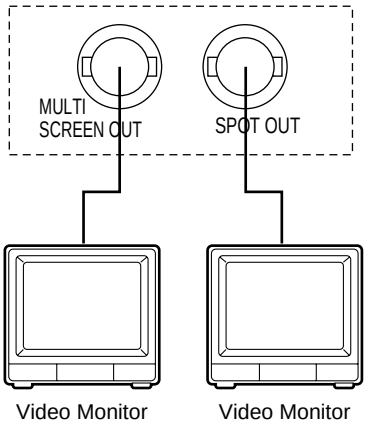
■ Connection of the Digital Disk Recorder (Example: WJ-HD100) to a Video Multiplexer

Connect the Digital Disk Recorder as shown in the example below.



■ Connection with the Monitors

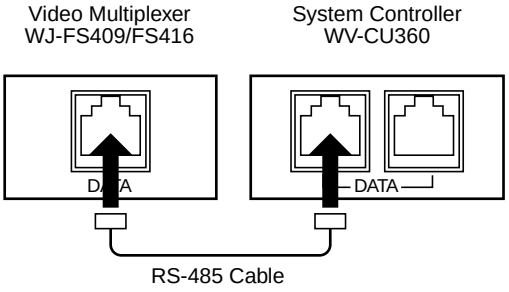
Connect the Monitors to the Spot Output (SPOT OUT) Connector and Multiscreen Output (MULTISCREEN OUT) Connector on the rear of the Video Multiplexer.



■ Connection with the WV-CU360 System Controller

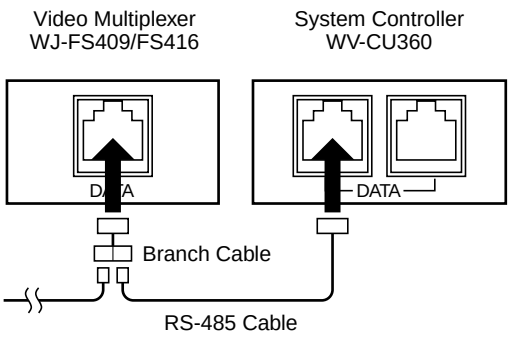
● Basic Connection

Connect the DATA jack on the Video Multiplexer to the DATA OUT jack on the System Controller with the supplied RS-485 cable (part of standard accessories of the System Controller).

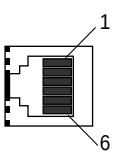


● Loop-through Connection

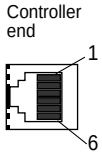
1. Plug the branch cable (optional accessory) into the DATA jack of the Video Multiplexer.
2. Connect one end of the branch cable to the DATA OUT jack on the System Controller with the supplied RS-485 cable.



If the cable is locally procured, make sure it is data grade cable suitable for RS-485 communication. A 2-wire twisted pair shielded cable, BELDEN 9406 or equivalent should be used. Pin assignments and data flow are shown below.

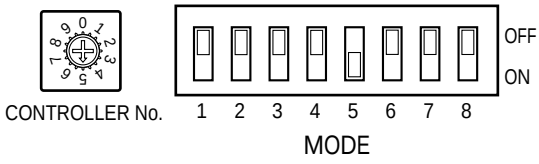


No.	Name	Data Flow	No.
1	GND	–	1
2	RX(B)	WJ-FS409/FS416 ← WV-CU360	2
3	RX(A)	WJ-FS409/FS416 ← WV-CU360	3
4	TX(B)	WJ-FS409/FS416 → WV-CU360	4
5	TX(A)	WJ-FS409/FS416 → WV-CU360	5
6	GND	–	6



● Setting the System Controller

The setting is briefly described below. For further details refer to the Operating Instructions for the WV-CU360 System Controller.

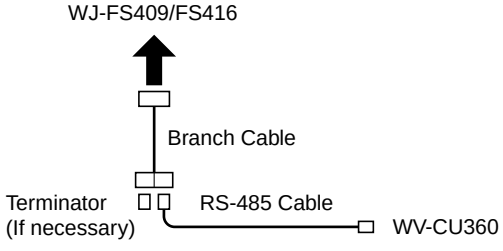


1. Rotate the CONTROLLER No. switch to set the controller number.
2. Set the 8-bit DIP switch to specify the communication mode.

● Termination for RS-485 chain

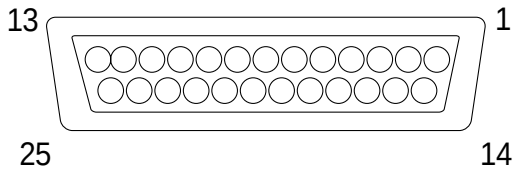
Termination is important for stable communications in the RS-485 chain. It must be located at only one point at the end positions in the chain.

- If a System Controller is at the end of the chain, set the 5th bit of the DIP switch to ON. See the illustration above.
- If a Video Multiplexer is at the end of the chain, plug the terminator (optional accessory) into one end of the branch cable as shown below.



■ ALARM/REMOTE Connector

This 25-pin connector connects alarm related control signals and/or remote switch inputs depending on the status of pins #5 and #22. The tables below show the pin assignment for the WJ-FS409 and WJ-FS416, respectively.



For WJ-FS409				
Pin #	Pin Name	For Alarm	For Remote SW1	For Remote SW2
5	Function 1	Open or +5V	GND	GND
22	Function 2	Open, +5V or 0V	Open or +5V	GND
1	Alarm/Remote 1	Alarm In 1	Remote In 1/Down	Multiscreen
2	Alarm/Remote 2	Alarm In 2	Remote In 2/Up	Still
3	Alarm/Remote 3	Alarm In 3	Remote In 3/Left	Zoom
4	Alarm/Remote 4	Alarm In 4	Remote In 4/Right	VTR/CAM
15	Alarm/Remote 5	Alarm In 5	Remote In 5/–	MENU
16	Alarm/Remote 6	Alarm In 6	Remote In 6/+	SPOT
17	Alarm/Remote 7	Alarm In 7	Remote In 7/SET	–
18	Alarm/Remote 8	Alarm In 8	Remote In 8/ESC	–
19	Alarm/Remote 9	Alarm In 9	Remote In 9	–
10	–	–	–	–
11	–	–	–	–
12	–	–	–	–
13	–	–	–	–
23	–	–	–	–
24	–	–	–	–
25	–	–	–	–
9	Alarm Out	Alarm Out	Alarm Out	Alarm Out
8	Alarm Recovery In	Alarm Recovery In	Alarm Recovery In	Alarm Recovery In
6	Alarm Reset Out	Alarm Reset Out	Alarm Reset Out	Alarm Reset Out
21	Sequence	–	Sequence	Sequence
7	GND	GND	GND	GND
14	GND	GND	GND	GND
20	GND	GND	GND	GND

–: No Operation

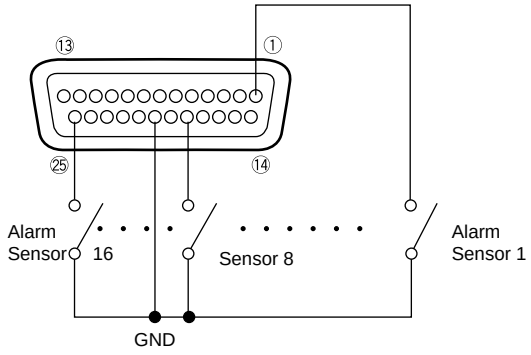
For WJ-FS416				
Pin #	Pin Name	For Alarm	For Remote SW1	For Remote SW2
5	Function 1	Open or +5V	GND	GND
22	Function 2	Open, +5V or 0V	Open or +5V	GND
1	Alarm/Remote 1	Alarm In 1	Remote In 1	Multiscreen
2	Alarm/Remote 2	Alarm In 2	Remote In 2	Still
3	Alarm/Remote 3	Alarm In 3	Remote In 3	Zoom
4	Alarm/Remote 4	Alarm In 4	Remote In 4	VTR/CAM
15	Alarm/Remote 5	Alarm In 5	Remote In 5	MENU
16	Alarm/Remote 6	Alarm In 6	Remote In 6	SPOT
17	Alarm/Remote 7	Alarm In 7	Remote In 7	–
18	Alarm/Remote 8	Alarm In 8	Remote In 8	–
19	Alarm/Remote 9	Alarm In 9	Remote In 9/Down	–
10	Alarm/Remote 10	Alarm In 10	Remote In 10/Up	–
11	Alarm/Remote 11	Alarm In 11	Remote In 11/Left	–
12	Alarm/Remote 12	Alarm In 12	Remote In 12/Right	–
13	Alarm/Remote 13	Alarm In 13	Remote In 13/–	–
23	Alarm/Remote 14	Alarm In 14	Remote In 14/+	–
24	Alarm/Remote 15	Alarm In 15	Remote In 15/SET	–
25	Alarm/Remote 16	Alarm In 16	Remote In 16/ESC	–
9	Alarm Output	Alarm Output	Alarm Output	Alarm Output
8	Alarm Recovery In	Alarm Recovery In	Alarm Recovery In	Alarm Recovery In
6	Alarm Reset Out	Alarm Reset Out	Alarm Reset Out	Alarm Reset Out
21	Sequence	–	Sequence	Sequence
7	GND	GND	GND	GND
14	GND	GND	GND	GND
20	GND	GND	GND	GND

–: No Operation

■ Connection with the Alarm Sensors

Connect alarm sensors to the ALARM/REMOTE connector. As shown in the tables on page 27, the WJ-FS409 accepts up to 9 sensors and the WJ-FS416 up to 16.
The sensors should meet the following specifications:

1. Allowable input voltage:
   Non-voltage contact, or 0 V to 5 V DC
2. Input definition:
   Specified by ALM INPUT settings, N.O. (Normally Open/Low active) or N.C. (Normally Closed/High active)
3. Active duration: Must be longer than 250 ms.



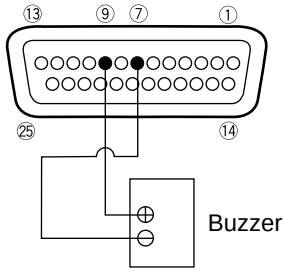
Example: N.O. specified by ALM INPUT

Notes:

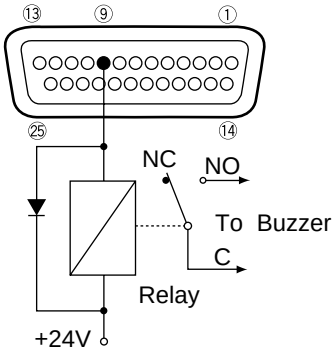
- For detailed pin assignments refer to page 27.
- Leave pin #5 open, or connect it to +5 V when using Alarm Sensors.

■ Connection with the Alarm Output

Pin #9 (open collector) turns to 0 V while the alarm is activated. This terminal can drive external warning devices such as a buzzer or lamp of up to 100 mA, 24 V DC. If the rating exceeds 100 mA, 24 V use a relay as shown in Example 2.



Example 1: Direct drive connection



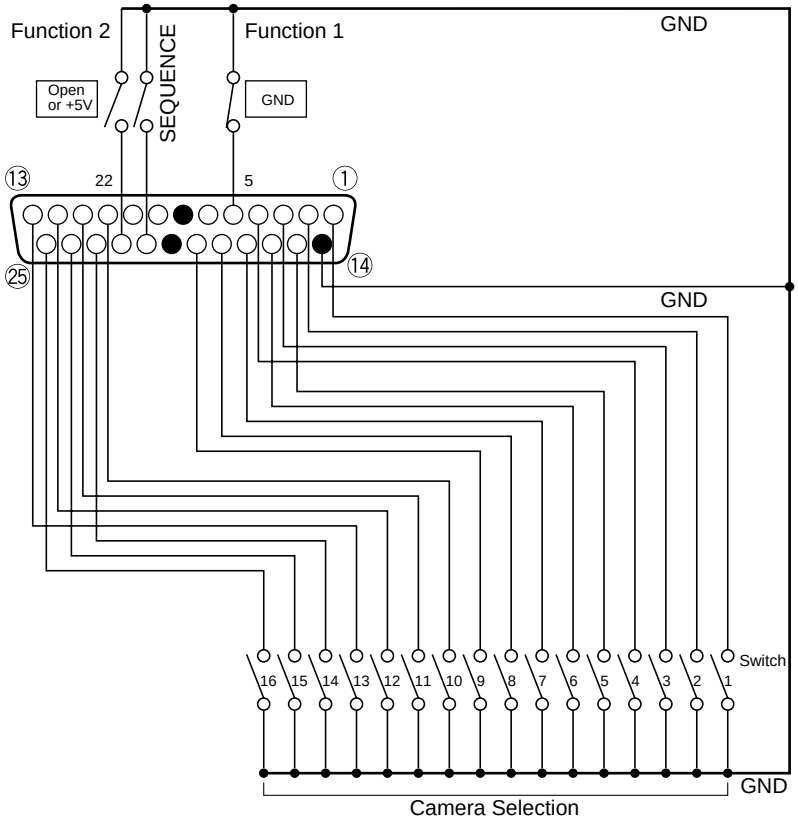
NC: Normally Closed Contact
NO: Normally Open Contact
C: Common

Example 2: Connection of devices exceeding drive capacity

■ Connection with the Remote (External) Switches

The Video Multiplexer can be remote controlled if external switches (locally procured) are connected to the ALARM/REMOTE connector. Remote switches, except SEQUENCE, are grouped under Remote SW1 and SW2. For more information refer to the pin assignment tables on page 27.

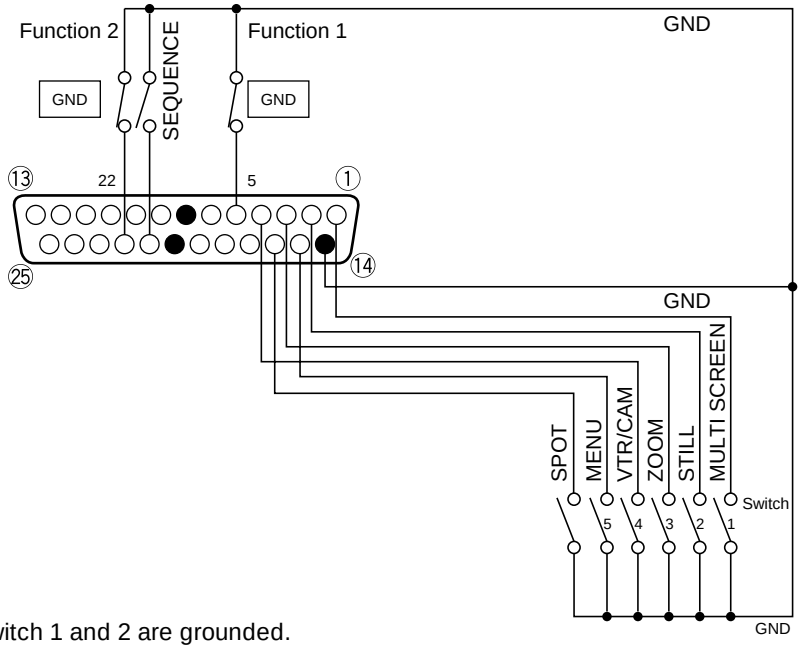
Remote SW1



Notes:

- Switch 10 through 16 are applicable only to WJ-FS416.
- Make sure that the Function switch 1 is grounded and Function switch 2 is open.

Remote SW2



Note: Make sure that Function switch 1 and 2 are grounded.

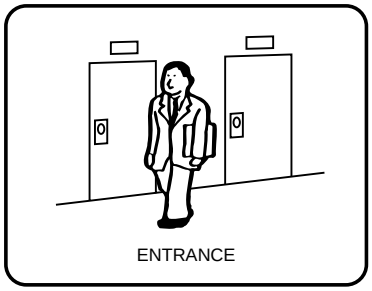
■ Monitoring the Camera Picture

● SPOT OUT

1. Spot Picture

1. Press a **SPOT/MULTISCREEN** button so that the LED of **SPOT/MULTISCREEN** button lights up.

2. Press a **CAMERA SELECT** button to display a camera picture on the monitor screen.
   The LED on the pressed **CAMERA SELECT** button lights up.



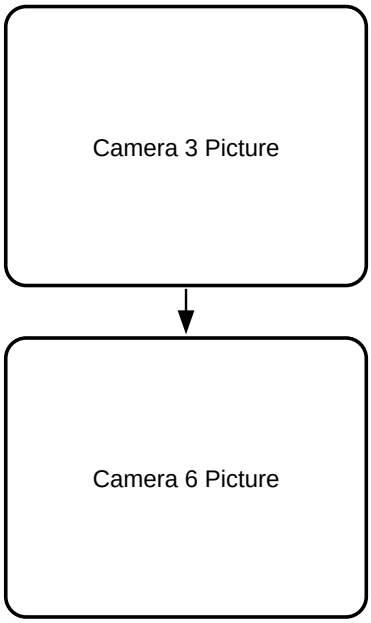
2. Spot Sequence

1. Press the **SEQ** button.

A sequence of single pictures is displayed in the order and dwell time selected for the MLT/SPT SEQ SETUP parameter in the SEQUENCE SETUP menu.

Note: Refer to the Sequence Setup on page 15 for more details.

Example of spot camera picture sequence



2. To cancel a sequence, press the respective **CAMERA SELECT** button.
   The selected camera picture appears in spot mode.

● MULTISCREEN OUT

1. Spot Picture

1. Press a **SPOT/MULTISCREEN** button so that the LED of **SPOT/MULTISCREEN** button goes off.

2. Confirm that the LED on the **VTR/CAM** button is not lit. If the LED is lit, press the **VTR/CAM** button so that the VTR/CAM indicator goes off.

3. Press a **CAMERA SELECT** button to display a camera picture on the monitor screen.
   The LED on the pressed **CAMERA SELECT** button lights up.

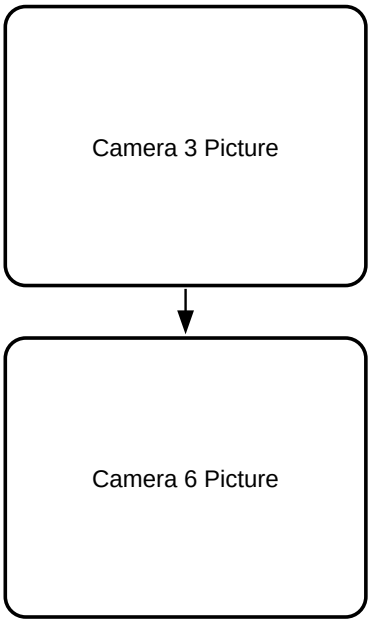
2. Spot Sequence

1. Press the **SEQ** button.

A sequence of single pictures is displayed in the order and dwell time selected for the SPOT SEQ SETUP parameter in the SEQUENCE SETUP menu.

Note: Refer to the Sequence Setup on page 15 for more details.

Example of spot camera picture sequence



2. To cancel a sequence, press the respective **CAMERA SELECT** button or **MULTISCREEN SELECT** button.
   The selected camera picture appears in spot mode.

3. Still Spot Picture

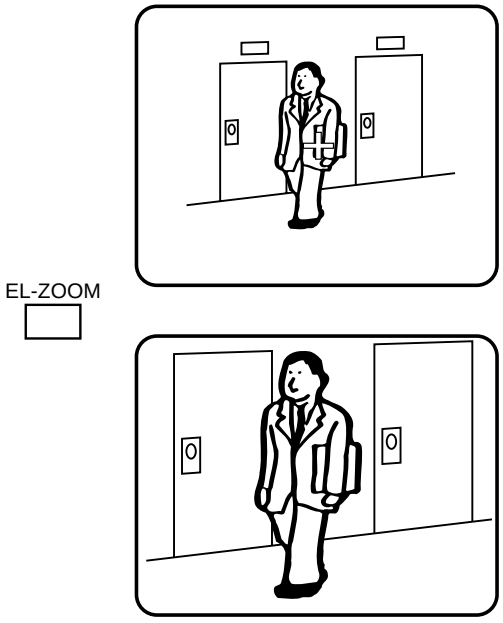
The following function is available in MULTISCREEN OUT picture only.

1. Repeat the procedures described above for Spot Picture.
2. Press the **STILL** button to freeze the displayed picture. The LED on the **STILL** button lights up, and the LED on the pressed **CAMERA SELECT** button starts to blink.
   The camera title and “STILL” (both blinking) alternate in the display.
3. To cancel the still picture, press the **STILL** button again.
   The LED on the **STILL** button goes off and the selected playback picture is displayed in spot mode.

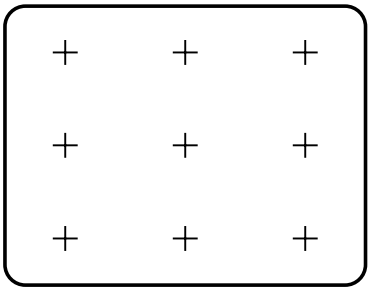
4. Zoomed Spot Picture

The following function is available in MULTISCREEN OUT picture only.

1. Repeat the procedures described above for Spot Picture.
2. Press the **EL-ZOOM** button to display the zoomed picture. The “+” sign appears in the picture.
   Note: The “+” sign disappears if no operation is performed within approx. 5 seconds. If the “+” sign disappeared, press the **EL-ZOOM** button again so that the “+” sign appears in the picture.



3. Press the cursor buttons (▼, ▲, ◄, ►) to move the zoomed area within the picture.



4. Press the **+** button to zoom in, or **–** button to zoom out.
   Notes:
   - When the **+** button is pressed, the picture is zoomed twofold.
   - The picture cannot be zoomed out to be smaller than the original size by pressing the **–** button.

5. To cancel this mode, press the **EL-ZOOM** button. The selected picture is displayed in normal size in spot mode.

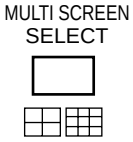
5. Multiscreen Picture

1. Press a **SPOT/MULTISCREEN** button so that the LED of **SPOT/MULTISCREEN** button goes off.

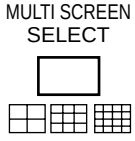
2. Confirm that the LED on the **VTR/CAM** button is not lit. If the LED is lit, press the **VTR/CAM** button so that the VTR/CAM indicator goes off.

3. Press the **MULTISCREEN SELECT** button to select multiscreen pattern (4-, 9- or 16-segment screen).
   Note: 16-segment screen is not available for WJ-FS409.

<WJ-FS409>



<WJ-FS416>



1	2
3	4

4-segment screen

1	2	3
4	5	6
7	8	9

9-segment screen

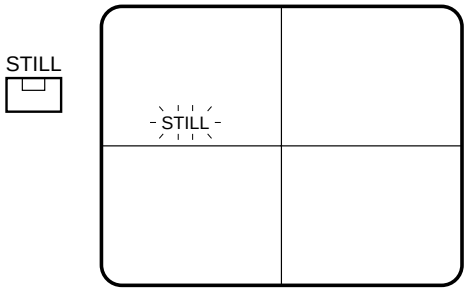
1	2	5	6
3	4	7	8
9	10	13	14
11	12	15	16

16-segment screen
(Only for WJ-FS416)

4. Each time the **MULTISCREEN SELECT** button is pressed, the multiscreen changes as follows:
   WJ-FS409: 4→9→4 screen segments
   WJ-FS416: 4→9→16→4 screen segments
   Notes:
   - When ON is selected for QUAD SHIFT on the MONITOR OUTPUT SETUP menu, pressing this button changes the screen as follows:
     WJ-FS409: 4A→4B→9 screen segments
     WJ-FS416: 4A→4B→4C→4D→9→16 screen segments
   - The 4A screen is a multiscreen with compressed pictures of channels 1 through 4, the 4B of channels 5 through 8, the 4C of channels 9 through 12, and the 4D of channels 13 through 16.

6. Still Multiscreen Picture

1. Repeat the procedures described above for Multiscreen pictures.
2. Press the **STILL** button so that the LED of STILL lights up.



3. Press the **CAMERA SELECT** buttons 1-16 (9) to freeze the displayed picture. **STILL** blinks in the display.
4. To cancel the still picture, press the respective **CAMERA SELECT** buttons or **STILL** button again.

7. Multiscreen Sequence

1. Repeat the procedures described above for Multiscreen pictures.
2. Press the **SEQ** button.

A sequence of multiscreen pictures is displayed in the order and dwell time selected for the SEQ MODE parameter in MULTI OUTPUT menu.
Note: Refer to the Sequence Setup on page 15 for more details.

3. To cancel a sequence, press the respective **CAMERA SELECT** button or **MULTISCREEN SELECT** button.

■ Recording on the Time Lapse VTR

Confirm the parameters on the REC OUTPUT SETUP menu. See page 14 for details.

Note: When EXT is selected but no camera switching signal is supplied, time lapse recording will not work properly. In this case, supply the camera switching signal or set REC MODE to 004 (INT) for normal recording.

■ Monitoring the Playback Picture

Playback picture is only displayed in MULTI OUTPUT.

Caution:

Set the time lapse VTR to the playback mode. Recorded tapes should be played back in NORMAL or TIME LAPSE mode.

Notes:

- This unit does not reproduce a clear picture in reverse playback.
- The playback picture may be skewed (horizontally distorted) in the upper portion of the monitor screen depending on the selected playback mode.
- The LED on the **VTR/CAM** button blinks when no signal is input to the PLAY IN connector. The LED also blinks if the codes (camera numbers, etc.) recorded on the VTR tape track have not been read for some reason. In this case, the playback picture is displayed simply by tracing the tape. Skipping instructions or other selections are ignored.
- The looped through VTR output may appear on the monitor while playing back a tape in forward or reverse search.
- The picture or title may become unstable because of the recording field rate.
- Depending on the condition of the VTR's video heads, the pictures of another channel may appear on the monitor.
  If this occurs frequently, adjust the tracking and slow tracking of the VTR.
- The size of pictures displayed on the multiscreen is smaller than in single picture format, which makes the titles hard to read. Select spot picture to make titles easier to read.
- Playback in linear mode (L12H, L18H, L24H) may produce noise or the picture of another channel in any recorded mode. Play back the tape in NORMAL (real time mode) or TIME LAPSE mode.
- To play back pictures in the OTHERS mode of the ENCODE menu and display them as stills, it is recommended to use the **STILL** button on the multiplexer, not on the VTR.

Notes about PLAYBACK AUTO function

- To use the PLAYBACK AUTO function, your VTR should have an E-E output that is capable of looping through the REC OUT signal to PLAY IN while recording. At the same time, the connections to REC OUT and PLAY IN should be made as shown on page 23.

- When PLAYBACK AUTO is ON, set the NOT REC parameter to CAMERA. If BLUE is selected (monitor background colour), PLAYBACK AUTO will not function properly.

  (Example: AG-6740)

```
((DISPLAY))
    MODE            T/D
    CHARACTER       WHITE
    POSITION        L-UPPER
    TIME SELECT     24HOURS
    DATE            ON
    TIME            ON
    T-MODE          ON
((REC INDICATE))
    NOT REC         CAMERA
```

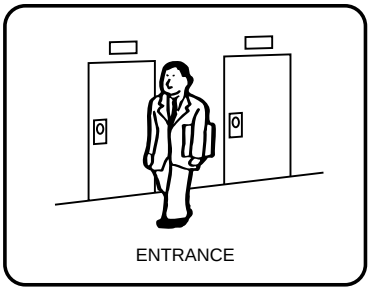
- When PLAYBACK AUTO is set to ON:
  – Automatic mode transfer between the Multiplexer and the VTR may take about 4 seconds from the time the VTR's PLAY button is pressed.
  – When the PLAY button on the VTR is pressed, the **VTR/CAM** button may momentarily turn to CAM. This does not affect operation;
  – It merely causes a slight delay in displaying the playback picture.

- In the following cases we recommend you set this function to OFF:
  – If you prefer pressing the VTR's PLAY and **VTR/CAM** buttons instead of using automated mode transfer.

1. Spot Playback Picture

1. Operate the VTR in playback mode.
2. Confirm that the LED on the **VTR/CAM** button is lit. If the LED is not lit, press the **VTR/CAM** button so that the LED on the **VTR/CAM** button lights up. This step is unnecessary when PLAYBACK AUTO is set to ON.

3. Press the **SPOT/MULTISCREEN** button so that the LED of **SPOT/MULTISCREEN** button goes off.
4. Press a **CAMERA SELECT** button to display a camera playback picture on the monitor screen.
   The LED on the pressed **CAMERA SELECT** button lights up, and the selected playback picture appears on the monitor.



Playback Picture

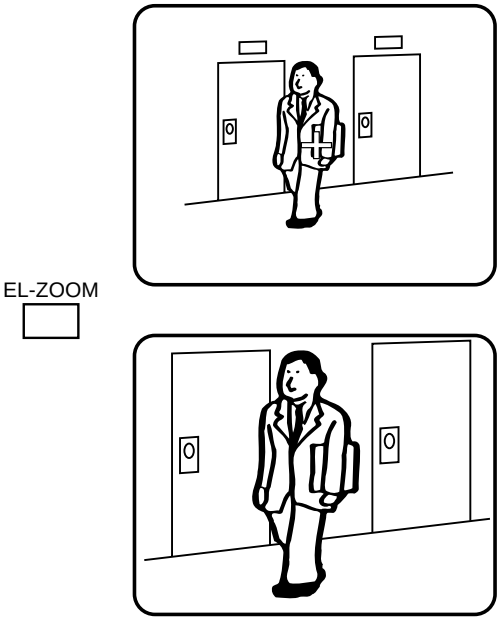
2. Still Spot Playback Picture

1. Repeat the procedures described above for Spot Playback Picture.
2. Press the **STILL** button to freeze the displayed picture.
   The LED on the **STILL** button lights up, and the LED on the pressed **CAMERA SELECT** button starts to blink.
   The camera title and "STILL" (both blinking) alternate in the display.
3. To cancel the still picture, press the **STILL** button again.
   The LED on the **STILL** button goes off and the selected playback picture is displayed in spot mode.

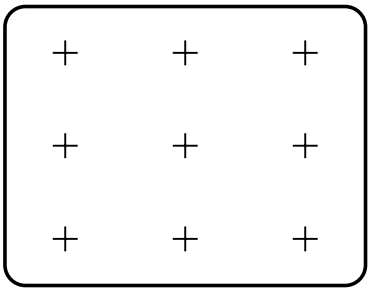
Note: The VTR continues playback while the still picture is displayed on the monitor screen.

3. Zoomed Spot Playback Picture

1. Repeat the procedures described above for Spot Playback Picture.
2. Press the **EL-ZOOM** button to display the zoomed picture. The "+" sign appears in the picture.
   Note: The "+" sign disappears if no operation is performed within approx. 5 seconds. If the "+" sign disappeared, press the **EL-ZOOM** button again so that the "+" sign appears in the picture.



3. Press the cursor buttons (▼, ▲, ◄, ►) to move the zoomed area within the picture.



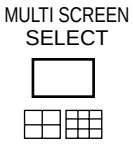
4. Press the **+** button to zoom in, or **–** button to zoom out.
   Notes:
   - When the **+** button is pressed, the picture is zoomed twofold.
   - The picture cannot be zoomed out to be smaller than the original size by pressing the **–** button.

5. To cancel this mode, press the **–** button or the **EL-ZOOM** button. The selected playback picture is displayed in normal size in spot mode.

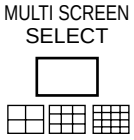
4. Multiscreen Playback Picture

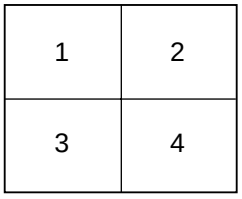
1. Operate the VTR in playback mode.
2. Confirm that the LED on the **VTR/CAM** button is lit. If the LED is not lit, press the **VTR/CAM** button so that the LED on the **VTR/CAM** button lights.
3. Press the **SPOT/MULTISCREEN** button so that the LED of **SPOT/MULTISCREEN** button goes off.
4. Press the **MULTISCREEN SELECT** button to select multiscreen pattern (4-, 9- or 16-segment screen).
   Note: 16-segment screen is not available for WJ-FS409.

<WJ-FS409>

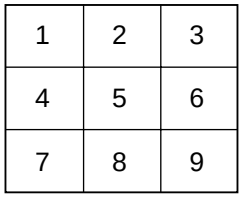


<WJ-FS416>

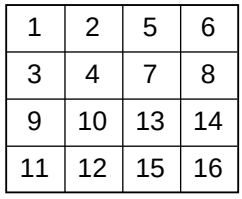




4-segment screen



9-segment screen

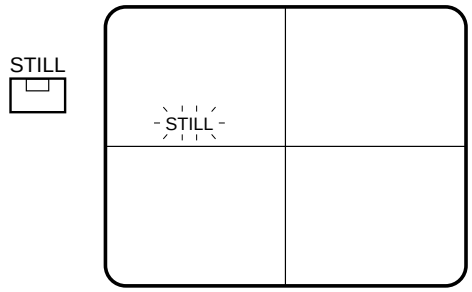


16-segment screen
(Only for WJ-FS416)

5. Each time the **MULTISCREEN SELECT** button is pressed, the multiscreen changes as follows:
   WJ-FS409: 4→9→4 screen segments
   WJ-FS416: 4→9→16→4 screen segments
   Notes:
   - This button does not function when recording.
   - When ON is selected for QUAD SHIFT on the MONITOR OUTPUT SETUP menu, pressing this button changes the screen as follows:
     WJ-FS409: 4A→4B→9 screen segments
     WJ-FS416: 4A→4B→4C→4D→9→16 screen segments
   - The 4A screen is a multiscreen with compressed pictures of channels 1 through 4, the 4B of channels 5 through 8, the 4C of channels 9 through 12, and the 4D of channels 13 through 16.

5. Still Multiscreen Playback Picture

1. Repeat the procedures described above for Multiscreen playback picture.
2. Press the **STILL** button so that the LED of STILL lights up.



3. Press the **CAMERA SELECT** buttons 1-16 (9) to freeze the displayed picture. **STILL** blinks in the display.
4. To cancel the still picture, press the respective **CAMERA SELECT** buttons or **STILL** button again.

6. Playback Multiscreen Sequence

1. Repeat the procedures described above for Multiscreen playback pictures.
2. Press the **SEQ** button so that the LED of SEQ lights up.

   A sequence of multiscreen pictures is displayed in the order and dwell time selected for the SEQ MODE parameter in MULTI OUTPUT menu.
   Note: Refer to the Sequence Setup on page 15 for more details.
3. To cancel a sequence, press the respective **CAMERA SELECT** buttons or **MULTISCREEN SELECT** button.

ALARM CONTROL FUNCTION

■ Alarm Input

The Video Multiplexer can handle the following alarms:

- **Interface Alarm**
  Alarm received from the ALARM/REMOTE connector.
  "ALARM" is displayed on the monitor screen.
- **Camera Switching Signal Loss Alarm**
  Alarm indicating that camera switching signal loss has occurred.
  "SW LOSS" is displayed on the monitor screen.
- **Video Input Signal Loss Alarm**
  Alarm indicating that camera signal loss has occurred.
  "CHXX LOSS" is displayed on the monitor screen.

■ Alarm Operation

When an alarm is activated, the Multiplexer, the Record Output and Monitor Output perform as shown below.
Refer to the ALARM SETUP menu of the SETUP menu on page 11 for settings.

● WJ-FS409/WJ-FS416 Multiplexer

1. Front Panel Display

When an alarm is activated, the Alarm Indicator and the corresponding **CAMERA SELECT** button blink.
The Alarm Output signal is supplied to pin 9 of the ALARM/REMOTE connector for the programmed duration.
The indicator lights up after the preset Auto Reset Time has elapsed or the Video Multiplexer has received the Alarm Recovery In signal from the VTR.
If another alarm is activated during output of the previous alarm, the later alarm is output for the programmed duration.

2. Alarm Buzzer

The built-in buzzer beeps for the programmed duration.
The buzzer stops beeping before that duration when the alarm is reset.

● Record Output

The pictures of channels where alarm is activated are recorded on the VTR in the mode specified for the ALM REC MODE parameter on the ALARM SETUP menu.

1. Alarm Priority Mode

The pictures of channels where alarm is activated are recorded with more fields than in normal recording if ALM - PRI is specified in the ALARM SETUP menu.

2. Alarm Only Mode

Only the picture of the channel receiving an alarm is recorded while other channels' are ignored.

3. Group Mode

The pictures of channels assigned to an ALARM group are recorded with more fields than normal. Assignments are specified in the ALARM SETUP menu.

● Spot Output

1. Alarm Display Mode

The camera title and "ALARM" display blink alternately on the monitor screen if the ALM DISPLAY is set to ON.

2. Alarm Channel Monitor Mode

The picture of the channel where alarm is activated is displayed on the monitor if Alarm SPT OUT MODE is set to SPOT. The picture displayed before alarm was activated will be restored after the alarm is reset. It remains on the monitor if Alarm SPT OUT MODE is set to OFF.

● Multiscreen Output

1. Alarm Display Mode

The camera title and "ALARM" display blink alternately on the monitor screen if the ALM DISPLAY is set to ON.

2. Alarm Channel Monitor Mode

The picture of the channel where alarm is activated is displayed on the monitor if Alarm MLT OUT MODE is set to SPOT. The picture displayed before alarm was activated will be restored after the alarm is reset. It remains on the monitor if Alarm MLT OUT MODE is set to OFF.

■ Alarm Reset

● Manual Reset

When an alarm is activated, the ALARM Indicator blinks.
The indicator keeps blinking until all alarms are cleared by pressing the **ALARM RESET** button.
The blinking or lit indicator goes off.

● Auto Reset

The alarm is automatically reset after the programmed Alarm Output Time has elapsed.
The ALARM indicator changes from blinking to steady light.
Pressing the **ALARM RESET** button will clear the alarm and make the indicator go off.

● External Reset

The alarm is reset by a recovery signal received from the external equipment at pin 8 of the ALARM/REMOTE connector.
The ALARM indicator changes from blinking to steady light.

OTHER FUNCTIONS

■ Camera Switching Pulse Loss Display

- When loss of the camera switching pulse is detected, “SW LOSS” will blink on the monitor screen.
- The buzzer does not beep.
- When the camera switching pulse is recovered, “SW LOSS” is cleared from the monitor.

ALL RESET

The Video Multiplexer WJ-FS409 (WJ-FS416) can be reset to the initial factory settings as follows.

1. Turn off the Power Switch.
2. Turn on the Power Switch (▂) while pressing the 4, 5 and MENU/ESC buttons (WJ-FS409) or 12, 13 and MENU/ESC buttons (WJ-FS416). All LEDs light up.
3. Resetting is completed when the buzzer stops beeping.

Note: Do not turn off the Power Switch until the buzzer stops beeping.

OPERATING CONTROL OF SYSTEM UNITS (Supplementary)

Operating the WJ-FS409 from the WV-CU360 System Controller

- When operating from the WJ-FS409, the menu can be accessed without entering a password even if PASS-WORD is set to ON. Password entry is required though to operate the Video Multiplexer from the System Controller.
- To select a monitor from the WV-CU360, press 1 and MON for Multiscreen output and 2 and MON for Spot output.
- The ALARM SUSPEND function is not available on the WJ-FS409, but can be accessed from the Controller.

■ Channel Loss Alarm

Channel loss may occur initially after completing the setup with the WJ-MP204. In this case, press the **ALARM RESET** button. Channel loss can be avoided by setting CHANNEL LOSS to OFF beforehand.

APPENDIX

This appendix details the elements for communication between the Video Multiplexers and the System Controller. For BAUD RATE, DATA BIT, PARITY CHECK, STOP BIT and WAIT TIME, see page 20 COMMUNICATION SETUP menu.

● Communication Protocol

Data Format

Code	[STX] [ADuuu] [;] [Command] [;] [Parameter] [EXT]
ASCII	(02H) ( ) ( ) ( ) ( ) (03H)

uuu=001 to 099 (Unit address)

A message consists of [STX], [Address], [;], [Command], [;], [Parameter], and [ETX]. [Address] is expressed as [Aduuu] where uuu is in the range of 001 through 099 in decimal form to identify the unit number of the Video Multiplexer.

● Command Table

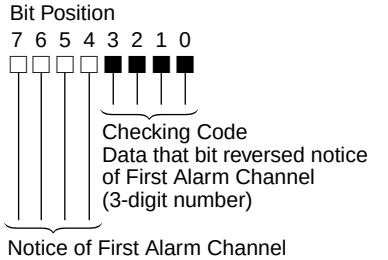
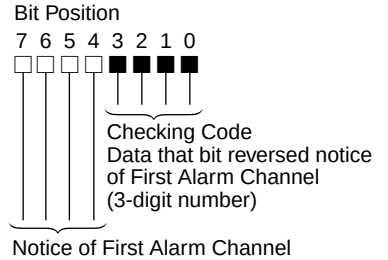
1. Video Multiplexer to System Controller

Item	Format	Example	Data format
Notice of alarm occurrence	ALM: $b_1b_2b_3a_1a_2a_3a_4$ $b_1b_2b_3$=Notice of First Alarm Channel $a_1a_2a_3a_4$=Notice of Alarm Channel	(Send 1) 5 channel: Alarm mode [sfx]ADOOA; ALM:[OF][OF][OF][OF][B7][OF][efx] (Response) None 5ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 0Fh 0Fh 87h 0Fh 0Fh 5ch, 15ch, 16ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 0Fh 0Fh 87h 0Fh 3ch 17ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 1Eh 87h 0Fh 0Fh 0Fh 128ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 78h 0Fh 0Fh 0Fh 1Eh	b_n Bit Position 7 6 5 4 3 2 1 0 □ □ □ □ ■ ■ ■ ■ Checking Code Data that bit reversed notice of First Alarm Channel (3-digit number) Notice of First Alarm Channel (3-digit number) Value: 0 - F (Example 1) b_n = 0001 1110 → Value: 1 (Example 2) b_n = 0011 1100 → Value: 3
			a_n Bit Position 7 6 5 4 3 2 1 0 □ □ □ □ ■ ■ ■ ■ Checking Code Data that bit reversed notice of First Alarm Channel (3-digit number) Notice of First Alarm Channel (3-digit number) Value: 0 - F (Example 1) a_n = 0001 1110 → Value: 1 (Example 2) a_n = 0011 1100 → Value: 3

These notice messages will not be implemented if the ALARM DATA is set to OFF in the SETUP menu of the Video Multiplexer.

2. System Controller to Video Multiplexer

Item	Format	Example	Note/Parameter
Multi or Spot Select	OMS : mmmm	OMS : 0001	“mmmm” = 0001 Multi = 0002 Spot
Single Spot Camera Select	OCS : ccccc	OCS : 00005	“ccccc” expresses a camera number. ccccc = 00001 to 00128
Sequence activation	OQT : 01F	OQT : 01F	
VTR/Camera select	OVC : m	OVC : 1	“m” denotes display mode selection. m = 0: Camera mode m = 1: VTR mode
Electronic Zoom	OZM : +	OZM : +	Normal, Normal with + sign, x2 zoomed and Normal are circulated.

Item	Format	Example	Note/Parameter
Still	OST : ccccc : m	OST : 00005 : 1 CH #5 will be stilled. OST : ccccc : m Every segment in a multiscreen will be stilled.	"cccc" expresses individual camera channel or all camera channels in a multiscreen. ccccc = 00001 to 00128 For individual ccccc = 00000 For all in a multiscreen "m" denotes display mode selection. m = 0: STILL OFF m = 1: STILL ON
Multiscreen Pattern Select	OTC : +	OTC : +	4-segment, 9-segment or 16-segment toggles.
Setup	MSU : n	MSU : 1	m = 0 : End Setup m = 1 : Begin Setup
Cursor Movement and Parameter Select	DCR : nn	DCR : G1 Down the cursor in SETUP DCR : A1 Move the + sign to right for Zooming	"nn" denotes as follows. nn = A1 Move the cursor to Right nn = C1 Move the cursor Upward nn = E1 Move the cursor to Left nn = G1 Move the cursor Downward nn = +1 Select parameter (+) nn = –1 Select parameter (–) nn = PD (Divide into the submenu by SET button.) nn = PU (Return to upper menu by MENU/ESC button.)
Alarm Recovery	OAL : n	OAL : 0	"n" denotes ALARM indicator status after recovery as follows. nn = 0 Turns OFF nn = 1 Turns ON
Alarm Input	DAI: $b_1b_2b_3a_1a_2a_3a_4$ $b_1b_2b_3$=Notice of First Alarm Channel $a_1a_2a_3a_4$=Notice of Alarm Channel	(Send 1) 5 channel: Alarm mode [sfx]ADOOA; ALM:[OF][OF][OF][OF][B7][OF][efx] (Response) None 5ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 0Fh 0Fh 87h 0Fh 0Fh 5ch, 15ch, 16ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 0Fh 0Fh 87h 0Fh 3ch 17ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 1Eh 87h 0Fh 0Fh 0Fh 128ch: Alarm mode b_1 b_2 b_3 a_1 a_2 a_3 a_4 0Fh 0Fh 78h 0Fh 0Fh 0Fh 1Eh	b_n  (Example 1) b_n = 0001 1110 → Value: 1 (Example 2) b_n = 0011 1100 → Value: 3 a_n  (Example 1) a_n = 0001 1110 → Value: 1 (Example 2) a_n = 0011 1100 → Value: 3

Note: Take a break for at least 320 ms (equivalent to 16 V Sync) from one transmission to the next especially when sending commands consecutively.

SPECIFICATIONS

Power Source:	220 V - 240 V AC 50 Hz
Power Consumption:	14 W
Camera Input (1-16)/(1-9)*:	1.0 V[p-p] /75 Ω 2:1 interlaced composite video signal
Playback Input:	1.0 V[p-p] /75 Ω composite video signal
Camera Switching Input:	1 RCA pin jack
Sampling Frequency:	4 fsc 17 MHz
Quantizing:	8 bit
Pixels:	720 x 544
Maximum Refreshing Rate:	4 fields/second
Camera Output (1-16)/(1-9)*:	Looped through Camera Input, 75 Ω automatic termination
Recording Output:	1.0 V[p-p]/75 Ω composite video signal, Multiplexed with Camera ID
Multiscreen Output:	1.0 V[p-p]/75 Ω composite video signal
Spot Output:	1.0 V[p-p]/75 Ω composite video signal
Data (Input/Output):	Based on RS-485 (4-lines) Modular Jack x 1
Alarm/Remote Control:	25-pin D-sub Connector
Alarm Recover Input:	1 (0 V - 5 V DC)
Alarm Recover Output:	1 (0 V - 5 V DC)
Alarm Output:	1 (No Voltage Contact, O.C. [24 V DC, less than 100 mA])
Ambient Operating Temperature:	–10°C - +50°C (14°F - 122°F)
Ambient Operating Humidity:	Less than 90 %
Dimensions:	420 mm (W) x 44 mm (H) x 350 mm (D) [16-9/16” (W) x 1-3/4” (H) x 13-3/4” (D)]
Weight:	4 kg (8.8 lbs.)

Dimensions and weight are approximate.
Specifications are subject to change without notice.
Specifications marked with * apply to WJ-FS409.

STANDARD ACCESSORIES

Rack Mounting Bracket ..... 2 pcs.
Screws (M3 x 10) ..... 6 pcs.
Switch Protector ..... 1 pc.

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